

FERRANTI Computer 5ystems

# PT7 cuts costs Inter-district Control Control

Thursday, January 20, 1983

# BTG seeks City backing of Inmos

by Kevin Cahill THB British Technology Group is speeding plans to raise private fin-ance for Inmos io the wake of further controversy over produc-tion plans at the State-funded chip

According to BTG director Christopher Bostock, a prospectus ins already been produced and he more state funds. hopes the City will take a more optimistic view of the company

Last year the City rejected proposals for investing in Inmos, and one broker who was approached last year said that the lorecast profits for 1984 would have to be very visible before brokers would recommend invest-

The Bostock response was that the City would be able to see profits in 1984. The latest round of rontroversy, which follows allegations in the Sunday Times that Inmos management had transferred that agreement on the injection has still not been reached.

This raises the possibility that any assault on the government by either the Opposition or its own backbenchers could result in the loss of the funding.

eople into user groups," says ohn Grant, chairman of the IBM

profitable i6K RAM production from Newport to the US plant in Colorado, could not have come at a failure to decide on the valuation more embarrassing moment for

both the government and BTG.

Leas than a month ago Industry

Minister Patrick Jenkin had to do a rapid volte face on his earlier

on by rising production and the fall in sterling, forced Jenkin to allow the BTG to offer Inmos £15

of the stake in the company held by Inmos founders Iann Barron, Dick Petritz, and Paul Schroeder.

pany was also maintaining total silence on the position, other than to confirm that the 64K dRAM

fall in sterling, forced Jenkin to allow the BTG to offer Inmos £15 million in additional funds.

With Industry Ministry officials embarrassingly pointing out that the money is not coming from the DoI, but from existing BTG funds, the BTG acknowledged that agreement on the injection has still not been reached.

to confirm that the 64K dRAM production was moving to the Newport factory.

The Sunday Times alleged that the 64K production was unproven and facing intense competition from Japan, but Inmos founder Iann Barron claimed that test production of the 64K at Newport had been successful and that yields been successful and that yields

Barron further predicted that employment at the Newport fac-tory should reach 1,000 "next



by Philip Hunter
THE onslaught of personal computers is being cautiously welcomed by the major groups representing users of larger machines. But the user groups do not expect a sudden surge of new members.

"We don't expect floods of the professional label to the user groups and not expect a sudden surge of new members.

"We don't expect floods of the professional label to the latest UK-US joint venture in cable television will champion the cause of advanced techniques. Cable & Wireless and the Charterhouse banking and investment group have teamed up with Commoc Cable TV, which is claimed to be the US leader in designing and building switched optical fibre networks.

a sudden surge of new members.

"We don't expect floods of popular with his members.

"We now were have so far Optim-MCS range is 'set to challenge DEC'

popular with his members.

Wang users have so far organised themselves into separate functional groups, he says, and there is likely to be a new group for the Professional under the Wang UK User Group umbrella.

The Hewlett-Packard 300 User Group is happy with the quality of the new HP 125 microcomputer announced last year, but thinks it is rather too expensive. "It is very easy to interface to the HP 3000," says User Group chairman Ivor Davis, who works for the John Hoskyns Group. "But what we are not so pleased ebout is that the ptice is too high." computer users association (CUA).

"The hobbyist will enter local user groups in a pub somewhere."

Otherwise the personal computer will mainly be just an addition to existing small business systems, Grant adds. Grant adds.
The ICL CUA has so far been

unaffected by the personal compu-ter because one of the rules of membership is that the machines have to be bought directly from the company. The ICL Personal Computer is not sold directly by ICL, but through the Traderpoint scheme for dealers set up early in 1982. Decus, the Digital Equipment users group, expects to cater for a large number of personal computer users. Decus chairman Allick Wilkinson is also chairing a steer-"Maybe we will have to change our rules for the new situation," anys ICL CUA vice chairman John Atkin. But users of the larger ICL DRS range of microcomputers are already eligible to inin, Ating group for PC users, and ex-pects there to be small local clubs affiliated to Decus for small busi-

UNIVERSITIES could soon be thanking their lucky IBM stars. Pollowing the relegation of the 3081 D to "has been" status last year Big monsters cluttering up the corporate floor, IBM is flogging 'em off chesp being offered in the US, according to sources. The position in Burope varies country to country, but big savings are in the offing.

DESPITE having a considerable investment in ICL maintresses.

Murden, previously managing director of Singer Business Machines and Nixdorf UK, said that the product range and capability would rival and exceed that of DESPITE having a considerable investment in ICL mainframes, the BBC choss to go outside for computing resources for its new World Reporter database for journalists. Datasolve's IBM 3081 for the job of running the database following an investigation into which machine should be used. Despite the application being almost tailor-made for CAFS, the report advised against the use of the ICL machines on financial grounds. It is difficult not to smell the unpleasant aroma of politics triumphing over technical recommendations in the deal. At the cheap end, Optim is to market the new Amigo micro, made by the US Ontel, as well as its old Ace range. The two manifacturers' ranges will overlap in mid-market, with MCS offering the larger systems. Their main target will be the hotel and catering industries for which they intend to provide turnkey, hardwars and

IBM is rumoured to be setting up a specialised leasing operation in the UK along similar lines to the one announced last year for the US. The broker backing the US organisation is Merrill Lynch, Rumour has it that the National Westminster Bank will be underwriting IBM's UK leasing. How's that for true blue support?

## User groups welcome |US, UK firms in cable venture link

The two UK partners will each own 40% of the new company, Cable TV Construction, which will specialise in advising applicants for

by George Black
THB takeover of the American
MCS by Optim this week will give
the new junt venture a range of
systems from £2,000 up to
£320,000. Mike Burden, chairman
of Optim, signed the deal with
MCS president, Michael Brennan, at the Which Computer?
show in Birmingham on Tuesday.
Optim was formed only six
weeks ago when its parent Monotype decided to hive off its computing enterprise and concentrate

At the cheap end, Optim is to

the market potential for nearly two years and has decided to concentrate on construction, through this joint venture, and on financial services to franchise applicants.

By next year, Charterhouse believes, spending on setting

leves, spending on network con-struction will have reached £400 million a year in the UK.

As well as providing financial expertise, Charterhouse will call

software systems.

Work is under way on a com-

MCS Mini-Computer Systems of New York specialises in multi-user and multi-process systems. Brennan will continue as a director, Joint managing director with Burden of the new combination will be John Richards, formerly of NCR and Ventek.

MC8 was founded by 1967

software company, moving into hardware in the early 1970s. It ex-

panded into Canada and Europe and set up a UK branch in 1976,

was founded in 1967 as

network operating franchises, as well as in constructing networks for the successful ones.

Charterhouse has been studying the market potential for nearly two years and has decided to concentrate on construction, through this contrect maintenance compeny whose services will be called on.

> running public telecommunications networks in 29 countries and in supplying turnkey networks and computer systems to com-panies in the UK and abroad.

Last October, gott backed talks aimed at family the super" CAD/CAM on with Compeda and Rank came to nothing, leaving the invidence to see to deep the sufficient cash to deep the superior of the sufficient cash to deep the superior of the sup Cable & Wireless will draw on its experience in installing and products in the increased throat CAD/CAM business

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VAXIST Digital Equipm

#### Quest hand CAD/CAN interests to Arab firms

by Andrew Thomas
QUEST Automation is &
vely pulled out of the Capt
market. A £2 million cast in
from the Arab Research all
velopment. Trust of velopment Trust, via mi companies, will be used but R&D and part of the one company, leaving the mix data entry tablet as the one cant

company.
Should the deal get the perform Quest shareholder, bit board la recomment. acceptance, the group wile: ganised with Quest CAE best an associate company, 51% i shareholding going to Give Transducers and United in logies Massawippl UK, me panies controlled by the lat. search and Development Im'

year-end results soon and On , lysts predict that the fla loss made in the first half al been reduced to around al million mark by improved Quest has had cash mon!

Quest managing directs
Ebel was unavailable for the

Centre computerisation contract at Swansea by withdrawing its application, though IBM will not get a "rubber stamp" on its bld, according to the CCTA. A statement from Honeywell ald: "After a full technical evaluation and a detailed examination of system requirements and con-straints it became clear that the ruary 1982, pre-til amounted to £2.86 milion; pared with a profit of £1861; the same period in the [6] huge conversion task required made it uncertain that the project could be carried through in the aid down timescale entirely free of

> The company told both the DVLC and the CCTA of its decision. But 1BM cannot expect to get the £16 million contract purely because there is no competition. A spokeswoman for the CCTA told Computer Weekly that IBM would have to go through the full "technical evaluation to prove that it can deliver the goods required within

the required timescales."

A decision is now expected in Turn to page 2

early summer, instead of late sum

by Kevan Pearson
HONEYWELL has paved the way for IBM to get the prestigious Driver and Vehicle Licensing She said the stories saying bad won were misleading. She said the stories saying IBM bad won were misleading. "IBM

Way open

for IBM

centre

at licence

has not won."
But there can be little doubt that IBM will be able to deliver the necessary systems. Or that it will put its full technical might behind its bid, even though the £16 million the contract is said to be worth is small beer to a rompany which has just announced a record year for 1982 with sales of over \$34

public sector contracts in the past, in company with other US based computer manufacturers, that it would have no choice but to con-tinue even if it felt as Honeywell does about the "risk."

IBM was furious when ICL was awarded the PAYB mainframe contract in 1980. It was so incensed that it refused even to tender for the peripherals contract, itself worth as much as the main-



Thursday, January 27, 1983 Number 844 35p

## 'Buy British' slant in new list of govt micro suppliers

GOVERNMENT micro buyers are to face a new choice, and it is predominantly British. The list of standard microcomputer suppliers drawn up by the Central Computing and Telecommunications ing and Telecommunications
Agency has had a thorough facelift, with only two of the present
eight remaining. Of the 12 computers on the new list, seven manufacture in the UK and one is about
to start doing so.

Out goes Commodore, along
with Research Machines, Thame
Computers, Equinox and Wilkes
Computing, Modata is replaced by
Digital Miero Systems, while
Apple and Casu move on to the

Apple and Casu move on to the new list. In come ACT and DEC, though only with its Rainbow and DECmate machines, along with DEC mate machines, siong with British manufacturers Comart, Future Technology Systems, Lo-

gica, Torch, Videcom and ICL with its DRS and Personal Computer. Digital Micro Systems, which is soon to start UK manu-

The machines are split into three categories: low-cost general purpose micros, systems stretch-ing from single to multi-user operations and microcomputers for scientific use. The proportion

of British manufacturers on the new list was welcomed by David Broad, chairman of British Micro Manufacturers Group. He bas double cause for celebration as he is also chairman of the Comart group, which has joined the select band. "It is a step in the right direc-

micros in government offices. New CCTA director, Paul Freeman expects a boom in govern-ment purchases of microcomputan estimated average price of £8,000. Over the last two years

only 700 systems were installed.

The make-up of the new list, with British manufacturers well placed in all the general application areas, will make it likely that the bulk of these government-bought micros will come from the British manufacturers. It is up to the murchasing departments to have

#### house DP operation, Corporate in-formation Services (CIS), when Dataskil was closed 18 months ago. The work run at the centre if

ICL'shuts

ICL is closing its Reading System

Centre, and the 56 staff are to be

redeployed within the company

The centre was originally run hy

sion, Datoskil, and provided test

bed facilities for customers about to install ICL machines. The centre was taken over by ICL's in-

Reading

centre

recent months has been mainly for other ICL departments, and the reorganisation has left CIS over-equipped with hardware.

#### Damages award

MASTER Resources Ltd has been awarded £51,000 damages from TSB Computer Services (Wythenshawe) by an independent arbitra-tor. MRL of Cheshire had been seeking £1.5 million for breach of

#### **Atlas first**

ICL chairman Sir Christopb Laidlaw announced at Tuesday's Laidlaw announced at Tuesday's annual meeting the first commercial customer for the Atlas 10; an indication of increased sales and profit in the first half of fiscal 1983; and the reorganisation of overseas marketing. J. Sainsbury, an IBM site, ordered the Atlas 10, worth up to Ci0 mellion. worth up to £10 million.

#### Microsystems 83

THE Microsystems 83 exhibition scheduled to take place in London next month has been merged with Computer Weekly's new Compu-ter Trade Show, to be held from April 26-28 at the Wembley Exhibition and Conference Centre. See page 8 for more details,

#### Jenkin under fire on Inmos delay revealed, many observers have dif-ficulty in accepting inmos state-

by Kevin Cahili
INDUSTRY Minister Patrick Jenkin has come under fire from
Welsh MP Roy Hughes as discussions about the future of Inmos

drag on.

Hughes has asked Jenkin in a letter to allay fears that Inmos could turn into another De Lo-

A clear-cut statement is needed on the future of the factory in agreed to advance £25 million to Newport, said the MP, adding that build the Newport factory. the entire political establishment in Gwent was concerned about the commitmenta have never been Turn to page 8

velcomes

situation. According to Hughes, who visited the factory recently, only 180 people are employed there, although Inmos has con-stantly sought to reassure MPs that

■ Leader Comment - page 15

But because the details of those

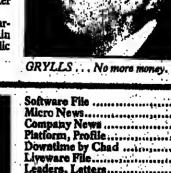
Shop window for nuts

Jenkin is also under fire from the Tory backbenches. Conserve-tive MP Michael Grylls, who campaigned against the government investment in Inmos, said that any more money for the chip maker would "be over my dead body".

Grylls has submitted a Parliamentary question saking lenking.

IBM group to let in





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Jowards the total system

#### Home Office looks into micros for the police

by our Parliamentary Correspondent

THE Home Office scientific research and development branch has been examining ways of using microcomputers in major criminal investigations and of transferring data from a micro to a larger system where greater canacity is

Patrick Mayhew, Minister of State at the Home Office, said in a Parliamentary answer that the work should be completed in the spring. Guidance would then be issued to chief officers of police. Mayhew disclosed that the

Home Office has been in touch with the Chief Constable of West Yorkshire about the provision of computer assistance to help officers investigating major crime.

There had been criticism of the lack uf computers to help narrow down the list of possible suspects in the Yorkshire Ripper case.

A further outbreak of attacks on women in West Yorkshire has prompted the Home Office to keep in close touch again with the Chief

In conjunction with the Essex police, the Home Office scientific research and development hranch has been conducting an experi-ment intended to provide, in the longer term, a computer system specifically geared to major crimi-

nal investigations.

Meanwhile, said Mayhew, certain Police National Computers have been made available on an experimental basis to the officers

investigating a number of attacks on women in Surrey and the Metropolitan Police District.

These facilities are additional to the PNC files normally available to police officers in criminal investigations.



## Local authorities fear privacy cost

THE Data Protection Bill could cost local government £22 million to pay for registration and revision of computer systems, according to the Local Authorities Management Services and Computer Committee

"We welcome the Bill", said Roy Barnes, director of Lamsac, because we have been in the twilight zone too long, hut we are concerned about the cost at a time when local authorities are being

The 10-year-old Lamsac Working Party on Data Protection estimates that it will cost local government £11 million each year over

Our Parliamentary Correspondent adds: Serious misglvings felt among Labour Purty members about the Data Protection Bill were voiced by Lord Elwyn Jones, a former Lord Chancellor, in the Lords Second Reading debate.

He welcomed the appointment of a registrar to maintain a register of personal data users and computer bureaux. But he questioned how independent the registrar's office would be.

He feared that if the Bill were enacted in its present form it would mean that highly confidential and sensitive information could be secretly disclosed to the two years to implement the changes. So far there has been no indication of where local govern-

was even possible. He regressed that de p

to have been to get man little compliance with the Convention for the Pres Individuals as it could. The Liberals also meet. the government's process grounds that they would

ter stored data.

BT is giving area managers greater control of their local husiwith the terms of the lan ness so that they can fight off com-petition as BT's monopoly is watered down. But the union says this means they will no longer have to use the hig ICL mainframes at Lord Wigoder, the br spokesman, told the lear the Bill was like "attachen fish with a wad of concer Several peers wanted to manual systems of filing at 10 centres acrosa the country or even refer to BT specialists before cluded in the Bill as well as

"You only have to visualise 61 pin-striped Davy Crocketts charging off to re-invent the wheel to see the farce of it all," said a union spokesman

auying their own hardware and

Union warns

by John Kavanagh A BRITISH Telecom union has

hit out at plans to give the 61 tele-

phone areas greater autonomy.

go their own ways on computing.

The Society of Civil and Public
Servants claims that even major
projects such as telephone hilling

could give way to local systems.

Telecom of

'industrial

anarchy'



GRANT . . . "The quertion is how wide we open the doors".

# PCM users may join IBM 'club'

by Kevan Penrson USERS of IBM compatible computers could soon be eligible for membership of the IBM Computer

Users Association The issue was discussed at the last CUA council meeting in mid-January and CUA chairman John Grant believes that a decision

could be made by the summer. There is strong pressure open the association to company using IBM software but not IBM CPUs. The question is how wide we open the doors. There is a strong lobby in favour, but the council is being very cautious,"

At the moment, CUA membership is limited to the users of IBM CPUs, which locks out an increasing number of companies which use IBM software running on plug-compatible hardware.
The CUA has been in existence

"ICUA members are paying more for software systems and for 25 years and its rules for mem-bership were drawn up when IBM

together in a single package. It was when IBM was forced by the ICUA who are big users of IBM software and peripherals. legal action in the US to unbundle

its software that the plug compati-ble industry became seriously

There is a group representing users of National Advanced

Systems CPUs. But this deals only

with matters relating to the com-

puters themselves and the manufacturer. As Brian Hedge, clairman of the Independent Computer Users Association (ICUA) and as-

sistant general manager of Pearl

Assurance points out, the compu-

ter itself accounts for an ever de-

creasing proportion of the overnil DP budget.

informal talks on this topic at the

behest of ICUA members.

Hedge and Grant recently held

Proposals before the IBM CUA provide for users of IBM software to become CUA members irrespec-tive of their choice of CPU. This would allow members of the ICUA, for example, to become IBM CUA members while retaining ICUA membership.

■ The CUA is polling its members to see how IBM's December price rises have affected the bills in urder to determine what action to take next in its prices battle with IBM. The CUA made a formal complaint to IBM over the rises last year. IBM reacted by attempting to justify ita position on price rises during periods of high inflation.

IBM over the last three years has peripheral hardware today than they are for their CPUs. We have had price rises every six mon

### Japanese micro makers to push hard into UK in 1984

JAPAN'S micro makers will move into the UK in earnest in 1984.

"The Japanese companies are putting roots down this year," saya hitachi's computer products diviaion manager, Ted Marshall,

BARNES . . . Worried about the cost of data protection

for us," says Marshall. afford to take our time."

Volume shipments will not start until June this year for the IBM-compatible 16001, when Marshall hopes to have a network of 100 dealers in place. So far he has apready to press hard into the market. We should be judged by our 1984 performance, not on 1983's."

Hitaehi has now officially launehed its 16-hit husiness microcomputer, first seen here at the end of last year, but is still taking things slowly.

"It's not a go or bust situation dealers in place. So far he has appointed only one, London-hased bonsal, hut has been approached by 700. Through these and by 700. Through these and by direct sales into large companies Marshall reckons he will move tens of thousands" of machines.

One reason for the steady builden inrush, is to secure a good

not seem too difficult given the 16001's MS-DOS operating system and IBM PC-compatible floppy drives. Already 25 packages are running on the machine, from some of the 65 software houses that Marshall says have been moving programs across. These include Compact Accounting and Lifeboat Associates.



# for IBM

From front page.

Then, in 1982, it took action ngainst the Severn Trent Water. Authority after it had tendered for a contract and won the technical evaluation only to see the installation go to ICL.

IBM was overtaken by events in that case, and was effectively

that case, and was effectively forced to withdraw its High Court action, though it reaffirmed its principle that it is as British as

Ren Ceates
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Donald Kennett
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Andrew Thomas
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Chille Gotjeriti

Way open Software houses clash over financial package claims

by George Black
A WAR of words has broken out
in the financial software package
business. After Northern Software
Consultants made big claims for its
latest launch of real time products
this week, other firms in the field
came back quickly with criticism.
Howard Sherrington, of Northern Software said accounting packages which were not both database
and real time would look obsolete
in two years.

DISPLAY ADVERTISING

ICL.

The DVLC installation has always been troublesome. The present ICL System 4s were installed in the early 1970s, but these machines had already seen life under three different badges — ICL, Rnglish Electric, and the US telecommunications giant RCA.

RCA originally developed the machine in the 1960s to compete against 1BM's System 360.

IBM results — see back page.

the only one in the world which could offer identical systems of this kind across a range of main-

frames.
But Management Selence

America countered that its main-frame online systems had proved "extremely acceptable" to clients.
"I'vo a jaundiced opinion of Northern Software's statement," replied MSA's Martin Judd.
"There is no way we would be spending \$20 million a year on de-veloping systems that were out of date."

Operations which needed to be handled in real time — such as accounts receivable — were done that way; for others, which users hold on to. did not want in real time, such as fixed assets and nominal ledger — MSA had not provided it.

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pany's sales ledger patter.
"It's the first time is officence this system less' bell

markable performance markable performance months. It gave up to formation on customer, processing elerks used her sales, credit control sense and 99% of transcription of the sales of the National David Else of the National Porture Centre, which between the control sense are sales of the National State of t

had gained a lead over the But Package Program

commercial direc Northern Software's side, with en-Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS. Telex: 892084 BISPR

#### Commercial success for university company

by Robert Parry
A GOVERNMENT-hacked company set up to exploit ideas born in British universities is finding commercial success. Xtec, backed hy £250,000 put up jointly by the British Technology Group and venture capitalist Prutec, has represented in the company of the company TAC, and turned it to a more appealing product for commercial markets.

Since September, wheo Xtec separated from Cavac with the BTG/Prutec backing, 13 TAC aystems have been sold, and a good base of firm order equiries built up, says marketing director Peter Maple. He anticipates £1 million turnover by the end of 1983.

"There's a lot of potential in the universitles," adds managing director Tony Blake, "and we aim to hring it to market. It's today's technology – tomorrow's aimost - today. We can get it out there

The TAC started life in London's Imperial College, where it was designed to furnish Imperial's



BLAKE

"What the backing has done is to give us the resources to market the TAC successfully and to give more weight to product de-velopment," says Maple. Product development has included redesigning the hardware to give more modular kit, and the addition of a range of interfaces and protocol converters to cater for commercial users who need more than just n

A range of British-huilt modem will be added soon, says Maple.

Its main competition comes from established data switching companies like Gandalf and Micom, but Maple reckons the flexihility and low cost - around £70 per channel in isrge systems - will make it a winner. A single box can handle up to 256 devices, and the TACs can be cascaded.

The main market seen for this "system putty" is existing multiservice users who need to connect a wide variety of equipment to-gether and do not fancy hard wired patch panels or local networks.

"Retryone is talking about net-works," says Prutec technical business manager Marek Schor-Rylski, "but what about the people putting systems together who get it wrong? In Xtec's TAC

### US losing 'super' lead

by Howard Karten
THE US is in danger of losing its lead in supercomputers. Without a national programme sinced at developing and making accessible the next generation of supercomputers, there appears little likelihood that the US will lead the world in future in this area.

This is the conclusion of a report prepared by a Defence Department-National Science Foundstion panel of experts.

requiring supercomputing includo geophysical and seismic explora-tion, weather prediction models, nuclear weapons design, atomic re-search and modelling.

The two US firms regarded as

Cray and Control Data Corp, both

future in this area.

This is the conclusion of a report prepared by a Defence Department-National Science Foundation panel of experts.

The panel led by New York university Mathematics Professor of the panel of experts of the panel of experts.

The panel led by New York university Mathematics Professor of the panel of experts of the panel of experts of the panel of experts.

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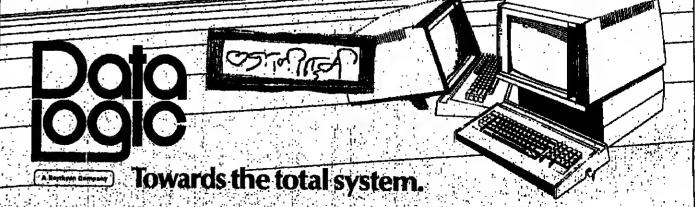
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## UK telecoms is awake - Baker

British telecommunications indus-try, according to Information Technology Minister Keoneth

Speaking at the launch by Plessey Office Systems, he said, "Up to now things have been a bit sleepy in telecommunications, and Britain has lost its share of the telecommuolcoulona market." He considered that the IDX was a sign that "industry is now responding positively to new challenges and opportunities in this field".

In the Commona last week Baker reported, in a written answer, that liberalisation of British telecommunications should be near com-

Plessey'e new system, IDX, employs time division multiplex switching with pulse code modulation of signal information capable of switching voice, text and detainformation over transpagator. information over transparent 64 Kbits per second transmission

LSI circuitry. Ian Maclean, chief executive of Plessey Office Systems explained, "You have to design your own LSI oow and put it into your systems."
The CPU is a Plessey developed

system providing, the company claims, three times the processing power of the Nova series of minicomputers. The memory is 256 K bits dRAM with floppy backup. Other hardware elements in pletion by July.

Where the programme had fallen behind the government's clude the 1/0 bue switch, memory

by John Riley
THE LAUNCH of Plessey's integrated digital exchange (IDX) last week marks the awakening of the Plessey'e new system, IDX, emplies the division multiplex.

The speech sampling rate is 8 kHZ with CEPT 8-bit A-law encoding as recommended for British Telecom's network practice. Appropriate the property of t Telecom's network practice, Approval was obtained just before Christmas for connection to BT networks giving IDX the edge over the Canadian company, Mi-tel'a, rival large PABX.

There is complete compatibility with System X and ISDN (the integrated services digital network that will combine telephone, telex and data communications), and IDX can form the heart of Pleasey's integrated business informa-tion system (Ibia) launched last June.

Plessey announced orders worth £4 million for IDX which will be distributed in the UK by Plessey, Telephone Rentala and British Telecom Enterprises. The UK annual market for large PAPVa in the Pappa PAPV nual market for large PABXs is worth some £52 million.



BAKER . . . "Up to now things have been a bit sleepy"

#### Exhibition shows the latest 16-bit micros following IBM trail

puter launch, it was all too easy to operating systems.

This basic configuration is expandable up to 768K of RAM, with Winchester discs and high resolution colour graphics svailable. As with Sord's Z80-based eight-bit micros, the company's Pips language is supplied with the system, to give easy-to-learn proable. As with Sord's Z80-based eight-bit micros, the company's Pips language is supplied with the system, to give essy-to-learn pro-

by Robert Parry
IN the wake of IBM's longawaited European Personal Comthe way to MS-DOS and CP/M-86

puter faunch, it was all too easy to miss the variety of 16-bit micros from other manufacturers that put in first appearances at Birmingham's Which Computer? show isst week.

Companies from Japan, from the US and Burope had new — or newiab — machines to throw at the booming business micro market.

Operating systems.

Another new Japanese face was the 16-bit 4050 from Sanyo. This is now being shipped by Sanyo itself and by its distributor Logities, The 4050 also uses the 8086, with an odded 8087 co-processor to speed up maths operations, and comes with 228K of RAM expandable to 512K.

with an odded 8087 co-processor to speed up maths operations, and comes with 228K of RAM expandable to 512K.

And the bulk of them follow the IBM route to Intel processors and MS-DOS compatibility.

From Japan came 16-bit additions to top up the personal computer ranges offered by Sord and Sanyo, The Sord machine, the M343, is built around the Intel 8086 processor — the fully I6-bit brother of the 8088 picked by IBM— and will run up to eight users.

A basic single-user system, with 256K of RAM, twin eight-inch floppies holding 2.25 Mbytes and a monochrome monitor weighs in at E5,100.

This basic configuration is ex-

Microtex,
The 8086-based 586 series covers floppy and hard disc machines for five to eight users, with Xenix, Pick and Oasla-16 operating systems added to the normal

# claim damages for

ductor shareholders are suing the company for damages in a suit which alleges business malpractice

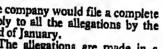
led to its suspension as a supplier to the US military. And finally that it was implicated in stealing trade secrets from IBM in the Japscam

esulting from the alleged wrong-

**Ex-beauty** queen joins the micro

two years ago and has been made administration and public relations director just as the firm moves into manufacturing with its own graphics tablet and light pen for the Apple and BBC microcomputers.

She has a six-year-old son; Oliver, and a husband in the catering business.



reply to all the allegations by the end of January.

The allegations are made in s class action suit. In the US this means that if the courts find against NstSemi then all investors will be able to claim damages.

It is up to the US District Court judge to decide whether the core judge to decide whether the case can continue on a class action basis, or whether individuals will

The allegations claim that the company's actions falsely inflated the value of NatSemi shares over the period 1977 to 1980, after which the share price fell, resulting in heavy losses for some of the shareholders. The plaintiffs will seek to prove that NatSemi took the actions stated, that they caused the actions atated, that they caused the company's shares to be over-valued, and that losses were in-curred by shareholders.

have to aue the company them-

a Traderpoint dealer he protection the Hull-based North Bride 18 ance Group. The £165,000 and 45 deal was pulled off by he had been supposed to the first th (AIM) against competitor in IBM and represents the same single order to date from a Tax point distributor.

Ice exports

carried oversess.

PLESSRY has broken in a sounding vign market will be come to be co

#### Survey aims to catalogue UK research projects

SALES BR

AT&T give

\$100m deal

its own uni

US telecommunications of AT&T has given a \$100 & contract for a fibre-optication nications system to its the Electric subsidiary.

AT&T aroused critician in which it placed a similar when it placed a similar in the contract of the contrac

when it placed a similar offer.
Western Electric instead of the
a lower bid from a Japanese

A UK instrument man h scooped a £2,5 million order New Zealand for computer equipment to monitor for a plants near Auckland. The or was placed with Taylor leave of Stevenage. Herts in New York.

of Stevenage, Herts, by New & land Steel Development Michael Systems as well as language systems as well as language

panels and associated field in

ICI has picked Computer land tion for an online data entry a validation system to be used as Petrochemical and Plastic by sion. For £120,000 ICI stop:

text editing and telex loguistics with the CA SyFA Model minicomputer.

BURROUGHS has told

£100,000 computer system;

Scouts Shops, ownership. Camping and Outdoor Com-stores. The B1000 will repar-

Univae BC7 for standard may

ICL has pulled off two own worth £850,000 for factor tout

equipment from the Down of draulics Engineering Group is orders are based on ICL's ONL

29 online manufacturing me package which has 90 und

worldwide and provide vide

Training system

BARCLAYS Bank has her

three Rediffusion Televentras puter systems for £250,000 #51

factory production.

minals to control most speed

ICL double

Camp order

SyFA for ICI

UK scoop

A LONDON consultancy is attempting to catalogue the in-creasing number of UK research projects in expert systems. A survey is being carried out on behalf of the Central Computer and felecommunications Agency (CCTA)
by Consultants in Information Technology (CIT) which has is-sued a question naire\* for the pur-

An expert system is deemed to consist of a koowledge base and a program designed to draw cooclusions or offer intelligent advice from the base. Most of the expert systems now being used in the UK are based on rules and are capable of justifying their lines of ressoning on demand.
CiT's Alex d'Agapeyeff thinks

that most of the responses to the survey will come from users of rule-based ayatems, and the ques-tionnaire reflects this, with the major systems like SPL's Sage be-

But we doo't want to be ao

This claim was made by David

Joice, managing director of Altergo (Ireland), when the contract with the United Arab Shipping Co. was announced last week.

The business cootrol system is to be installed on two Digital Equipment Vax minia in Kuwalt and Dubal. Systems of this com-

plexity have in the past been run

usually oo mainframe configura-

JOICE . . . "Sophisticated".

 80 character liquid crystal alphanumeric display • 32 character ASCII keyped Optional magnetic card rear

Water-proof, dust-proof to IP85

of virtually any computer system using 7 bit ASCII coded serial dela

transmission allows cable lengths

Spectra-let MERCURY Series terminals provide a magged operator interface to

● Bload tacker hading tensial automation ● Had and males trading ♦ Isolistual

5 SPECTRA-TEK

up to 2km typical

Optional configurations evaluate

nurputer system. Iyaical applicatuers are

milyany 🕶 Scandy systems

Intrinsiculty-sale obcultry sliows
 Installation in histordous erass

(sprode sidemment Easily interfeced to the serial port

20mA ourrant-loop serial

security system Sealed, rugged enclosurs for hostile industrial environments

**DEC** database claim

hy George Black
A £1.25 MILLION aystem being designed by British Software house Altergo will feature one of the most sophisticated DEC databases yet written outside the US.

This claim was made by David

MERCURY OF

WEATHER PROOF



The duration of the survey will depend on the response, but d'Agapeyeff expects the results to be
published in late spring. "If it
turns out we soon get the major
people, we hope to close the thing

The use of DEC's database management system oo PDP-I1 minis

is commonplace, but there have been few if any sophisticated uses of the DBMS on the Vax in Burope or the Middle East to date.

A Vax I1/780 will be set up i Kuwait and an 11/750 in Duba

which will share the database, bu

"We haven't yet decided how data is going to be moved from one to the other," said Simonsson. There is also to be a Vax in UASC's Liverpool branch. Completion of the Kuwait side of the task is planned for this apring and the remainder should be finished later in the year.

later in the year.

More than 60 Altergo staff in
Dublin will be engaged oo the pro-

will not be linked up.

PARTYF

A STATE OF THE SALE

THE RESERVE

in twu muoths," he said. The idea for the survey came after a CCTA visit to US experi systems centres.

## CAD centre sale will be share-out by Aodrew Thomas FRONT-RUNNERS in the race to buy the publicly-owned Computer Aided Design Centre in Cambridge and Design Ce

bridge will probably have to be content with a minority interest

ICL, which runs the Centre and provides all but six of its 150 staff, and US mini maker Prime are after a slice of the action. The govern-ment has set an April deadline for

But Nicholas Craig-Harvey of Hambros Bank, who is handling negutiotions for the Department of Industry, said, "The most likely outcome of the privatisation will be the setting up of a private company to run the centre - the shares being split between four or five independent shareholdera. "None of the companies

avolved will have a controlling nterest. I expect they will come from three or four groups of firms - computer companies, venture capitalists, insurance companies

formation Technology Minister Hambros is vetting prospective Kenneth Baker 12 munths ago on

the future of the centre, manned since its inception in 1969 by ICL Dataskil staff under a facilities memorandum to those deemed suitable. Craig-Harvey does not ossnagement deal. expect any redundancies other than the six eivil servants helping A BTG spokesman felt that the division of CADC shares would to nin the centre at present. open the way for overseas com-A Dol spokesman felt that the workforce, being part of ICL, would have a direct bearing on the panies to take an interest, "I can't see the government letting the CADC fall totally into foreign

negotiations: "ICL employees hands," he said. form the team that makes the CADC," be said. "They're the only valuable asset in the place. Craig-Harvey agreed. "The overseas luterest, should there be one, would be no more than 15%. This inust increase ICL's incentive The Dul believes the CADC can be sold as a viable cumpany, but

to put in a good bid."

There remains the strong possibility that Prime, which bought nut CAD/CAM systems house Compeda at the end of last year, could have in to the contract. erstwhile managing director of Compeds, Keith Trickett, is not convinced. "The CAD centre le by no could buy in to the centre as part stretch of the imagination a busi-ness proposition," said Trickett. "It spends £4.5 million and only of a consortium involving UK engineering firms and city venture makes £1.5 million.

#### 'Most sophisticated' FACE TO FACE WITH SYSTEK

## "If I were in the market for another system I would go back to SYSTEK"

5Y5TEK heve been supplying Terry Dart. the Data Processing Officer (Administration) et the Imperiol College of Scianco and Technology for four years, During that time ho says he has rarely had cause for

complaint about their equipment or service.
"Before that we suffered so much from leck of support from our previous supplier you can't imogino, theve olways found SYSTEK to bo very helpful end cooperative, meking certain that those people who can onswor difficult quastions ere there when you want them. I've found the support I've needed from SYSTEK end on thet besis I've recommanded them to a number of other

Terry explained that the college wante to make a move so that they could run two mochines together, their existing DEC™PDP 11/35 and a new PDP 11/54. It eppeared thet

prepared to sit down end talk to them ebout it and do the initiet work required.

"We were very pleased with the overell end result. Hot only did they try hard to understand our perticular problems, they came up with a very competitive prica plus somo impressive softwore solutions. And heve to admit I couldn't fault the originet Installation. When we installed o further new DCC™ PDP 11/44 we essumed it would be equally easy, but we hed more then a few problems to solve. SYSTEK I'm gled to say got there quicker than most"

"If you're in the situetion of only having e certain emount of money to spend, like most universities, it is possible to get a good price from someone then find thay drop you in it. After my experience with 5YSTEK it would be very difficult to think of going elsowhere, because quite elmply they provide the kind of service I'm looking for." "The sign of o good supplier," Terry concluded, "is that you'll go back to them And I would certeinly go back to SYSTEK

Systek's no obligation edutsory service evalleble to help you plen the computer system thet's right for you. Call Peul Hervey



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Imperial College of Science and Technology, Londo





#### NatSemi shareholders 'business malpractice' by Kevan Pearson A GROUP of National Semiconthe company would file a complete reply to all the allegations by the

by its senior management.

The suit makes three allegations. First, it claims that pre-tax profits were overstated by a total of \$32 million in the four years up to 1980. Secondly, that it defrauded the US government by simplying the US government by supplying aub-standard components which COX ... Noxia's Frend the Fin-nish for IBM?

Nokia, specialising in banking and point of sale systems, announced and showed a 16-bit machine. The MPS4, to be known as Frend in this country, will not be available until the second half of the year, according to Nokia (UK) managing director Peter Cox.

But when it does appear it should come in at below £4,000 through a network of dealers, distributors and ORMs and by direct sale. case.

The plaintiffs in the case are claiming damages commensurate with the losses they experienced on their investments in the company

A spokesman for NatSemi de-nied all the charges, adding that

**Doard** 

by John Kavanagh
AN ex-carnival queen has struck a
blow for working mothers by becoming a director of an Ipswich
microcomputer retailer and consultancy, Micro Management.
Jane Drury joined the company

ing business.

"I'm a darned sight better mum than I, would be if I were stuck at home all day." Druty said. "I put in more effort to do things with Oliver at weekends than I would otherwise. And we quald otherwise. And we quald a storded things like aki-ing hotidays with him if I didn't work.

Working mums can make it work. You has heed to apply your self deggedly to the tiak.

Druty delivers Oliver to school in the mornings and a child minder takes him after school said in the indicate.

DRURY "Working mums can make it work"

directors are incredibly understanding, said Drury. They give full encouragement to anyone interested in building up the company with them."

Drury's experience includes working in operations on the ancient Adas computer at the Atomic Bherry Research Centre at Harvell and two years at in sister or smith the company of t

tend its pilot videotex triss; ayatem. The order include its Teleputer intelligent desking; minals with storage for 10 pages. Sixth Trace



NATIONAL Giro has bound a sixth Trace 7 document reach sorter from Recognition ment of Slough. The family race 1 is used to reach payment counterfoils, broad licences, postal orders, and counterfoils for fuel bills. First for AIM THE first ICL ME29 to kind

INDEPENDENT Computer sineering (Ice) has signed a like it on deal to supply Winchest subsystems and muldiplems two West German companies and Wapro. Ice, berg Ashford, Middleser, has million turnover, 70% of wind

New market

Hopes of economic upturn are focused on Hanover Fair

## Germany in bid to stimulate IT

Günter Möller, director general of the European Business Machine Manufacturers' Associatinu and leading member of the German DP ndustry, pointed nut that the Gergrowth rates of previous years.

He considers that two factors may help to change this trend. Firstly, a clear majority government in the March 6 German Gen-

mic, political and social direction. Secondly, a campaign to en-ourage German home demand that is being focused around this April's Hanover l'air is intended to

formation technology.

Speaking in London last week,
Günter Möller, director general of
the European Business Machine

similar products in the same
period went up much less than
expected, by 1.5% to about £1.25
billion, while home demand similar products in the same slumped by 7% to about £1.6 bil-

lion.

Möller thinks that the reluctance to invest in new technology man office and data technology in-dustry has not matched the high rating general economic situation in Germany, but by the rapidly improving performance/price ratio of new technology products.

He explained: 'Companies still

eral Election would provide economents in the price/performance ratio of this new technology, with-out realising that they run the risk not only of losing their national and international competitiveness, provide a decisive impulse towards but also the crucial timing elemen an upturn in the economy gener-ally. of their entry into the high tech-nnlogy field."

EXPORTERS to Germany stand in benefit if top German industrialists aucceed in a campaign to stimulate user demand for incountries including 162 British ex-hibitors. The largest exhibition is Office and Data Technology, with over 1,000 exhibitors from 26 countries, including 32 from the UK, although new technology is represented in the other exhibi-

> A concerted effort is being made by German industrialists to convince German businesses, 95% of which are small or medium-sized, to invest in new technology. If successful, the home market would revive and a likely effect would be an increase in imports in these products.

> The German DP industry is making serious efforts to counteract concerted trade union claims that the introduction of the new technology there would be harmful

Möller said the efforts were



MOLLER . . . Aims to stimulate German demand .

who, while not hostile to the new technology, were suspicious of it.

A central forum to persuade voung people, not by spoken argu-ments, but by giving them hands-on experience of the new tech-

The forum will be staffed by young engineers, who will guide them in, for example, simple CAD/CAM applications, and by neutral medical specialists who

will answer questions on health

Möller last week rejected claims that new technology has led to unemployment in Germany. He said that while unemployment in had risen from 0.5% in 1980 to 4%, there bad, over the same period of time, been a decrease in the sales of word processors, as well as a worsening of the overall unemployment rate to 9%.

#### **UK** forum for office automation system users

Leasing deal

draws legal

practices into

computer age

payment for up to six menticit

Anglow Leasing has lolled to Wang and Wang-based soften house Oliver Budge to affer the the partners describe as a con-

plete solution" to a soliciter's

The system is based on Wart

Office Information System in a general word and data process facilities with Oliver Budget Is. Manager software catering for 6

Laurence Silman, Anglow as

aging director, says the family package is "tailored to the mate! the market," based on Angle!

cltors special needs.

20 years' experience.

by Kevsn Pearson

by John Kavanagh

A FORUM for office automation system users and maoufacturers has been formed in the UK as part of the US Office Automation Society, set up last summer.

SOLICITORS can enter the so-puter age by just signing on a dotted line and they need not say any payments for six man thanks to a new tripertite me But the society overlaps in many of its aims with the 500-strong Inand financing deal.

The leasing deal, offered a
Anglow Leasing, a Rathechild a
sidisry, covers both hardware a ternational Information and Word Processing Association, formed in the UK four years ago and now breaking sway from its US parent. The Office Automation Society software tailored to solidar needs, and it has a prosin whereby the lessee can be

has 200 members in the US and a similar initial membership in the UK, with the aim of 1,000 members by July. It is headed in the UK by Don Tombs, who spent 12 years with Philips, latterly as office automation products manager. He now runs a consultancy specialising in video dise systems, Videodisc Technology.

People can only get information by going to expensive conferences or buying reports," Tombs sald, "With these sources people don't necessarily get what they want but rather what the supplier wants to tell titem."

The society's main sim is to

'General packages no longer viable'

## Trend is to trade specialisation

trade-specialised systems — is the most significant development in computing services over the past year, according to Doug Eyelons, director-general of the Computing Services were the Netherlands, Switzerland and Portugal.

The grown of vertical markets — was Gennany, but the grown in the grown in employment in the industry slowed to only 4.2% last year. It was 13% in 1979. The most profitable countries for computing services were the Netherlands, Switzerland and Portugal. He was commenting on the

European Computing Services Aasociation's annual market survey.\* have to concentrate on one area, like car dealers or hoteliers," he

The ECSA aurvey shows that software services is the fastest growing segment of the field, with user spending of \$2.73 billion in software services is the fastest growing segment of the field, with user spending of \$2.73 billion in 1981 likely to grow by 15.5% each year up to 1986.

The biggest European software market is France, with a 22% bers, £250 (others).

THE growth of vertical markets - Weat Gennany. But the growth in

Switzerland and Portugal, Though Britsin and the US saw "People are learning that it is no longer viable to offer general packages auch as payroll systems. They going into second sources, such as retail chains, in search of greater

public databases, but thinks

The Professional series brings new standards

for business applications from £3,348.



EYEIONS . . . "No longer viable to affer general packages".

#### **BT** orders first undersea optical fibre cable

by Jnhn Kavanagh

FIRST optical fibre cable to go under the sea around the UK has been ordered by British Telecom to link Portsmouth and Ryde on the Isle of Wight. The £600,000 15-mile cahle will be supplied by

The installation of the cable, due to enter service in 1985, is part of BT's £280 million a year plan to provide digital communications services throughout the UK. Almost 1,900 miles of cable worth 640 million have been control. £40 million have been ordered form UK firms.

The cable will use monomode nr single-wave, transmission, which will enable the light pulses earrying the communications traf-fic to travel the 15 miles without being sniplified on the way.

With the more bulky multimode optical fibre systems the light sigals have to be regenerated every live miles, and expensive business

involving amplifiers buried in the ground or under the sea.

With analogue coaxial cables amplifiers are needed every two miles. In addition, coaxial cables are 10 times the size of optical fibre

The Rainbow 100 provides the flexibility for 8 and 16 bit programs in one personal computer from £2,300.

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# Rumanian computer spy jailed by French

by Jack Gee
A FRENCH court has jailed a
Rumanian research specialist in
computer technology for two years
after finding him guilty of passing
on information about France's
data processing know-how to the
Communicity government in Bucharest.

parallel language."

Demanding a five-year prison
term, public prosecutor Gabriel
Dupin de Beyssat said, "The
nation must defend itself against
any explonage nr intelligence
operation."

Munican did not

Traian Muntean, 33, was sentenced by an Assize Court in Paris after being arrested by the French luter espionage service in 1979. The Rumanian had been

working as a research scientist in France since 1973 and had been teaching information technology at Grenoble University. He denied charges of "intelli-geore with a foreign power damag-ing to France's interests" and ned that he had never delivered information to the Ruma-

search, not in its practical applica-tions. 1 was working mainly on

nian authorities which could have

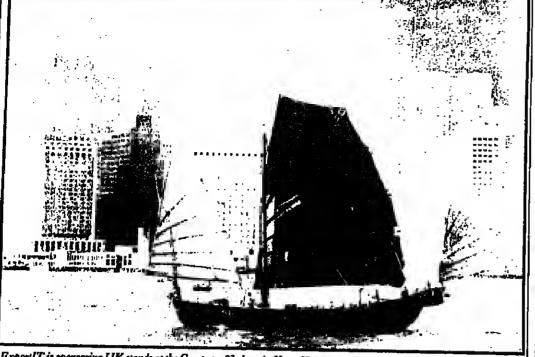
Muntean's lawyer, Maitre Henri Leclerc, said Muntean did not betray his adoptive country. "He was blackmailed by Rumanian secret service men."

The prosecution said the Rumanian computer expert made frequent visits to Eastern Europe to deliver scientific information.

Muntesn replied, "These were not confidential papers. When I went on trips from France to Britain to study work there on computer technology, I seot regular reports to my laboratory at Grenoble University. This was oot apying. My contacts in Rumania

were not espionage agents either, hut university professors."

He claimed that he used a secret code for ideotifying himself to his Rumanian contacts.



## **Cut-price entry to Far East**

and the Far East this spring.

The UK Information Techoology Export Organisation, ExportIT, in conjunction with the
British Overseas Trade Board, is
sponsoring UK stands at Comdex
Spring '83 in Atlanta, Georgia, the
Computer '83 exhibition in Hong
Kong in June, and the Computer
Exhibition in Singapore during
May.

higher). The cut-off date for the
days.

ExportIT points out that while
the oumber of computer installations in Hong Kong is increasing
at about 50% annually, the UK's
share of the market is only 4%. Io
additioo, software there is coosidered to be five years behind the US
and UK.

An all-in package including air fare and accommodation for two people and stand space, on a first-

by John Riley
CUT-PRICE opportunities are being offered to UK information technology industries which want to exhibit their products in the US and the Par East this spring.

The UK Information Technology Export Organisation, Rx-

The market is growing in Singa-pore. Figures for 1982, when Singapore's computerisation pro-

gramme began to gather pace, are not yet available. Io 1981 the value of imports of office and data machines totalled about £173 million, with the UK's share at £8.1 million, in third place after the US and Japan, according to the Aonual Statement of the Singapore

Department of the Singapore Department of Statistics.

In addition to the US, Hoog Kong and Slogapore shows, ExportIT is also offering similar £3,000 packages to the tenth Australian Computer Exhibition in Melbourne this September, and to the third Gulf Exhibition in Dubai Enquiries to exhibitions

Enquiries to exhibitions manager, Export IT, tel: 01-236 2741/3.

#### Microsystems & to merge with new computer trade exhibition

THE Microsystems 33 chieses clieduled to take place in Letter scheduled to take place in Letter scheduled to take place in Letter to the scheduled to take place in Letter to the scheduled to take place to the scheduled to take place to the scheduled to the scheduled to take place to

ness systems based on microse puters. The Computer Inc Show will attract more of the visitors as part of a much wik audience of systems house, fir buyers, dealers and distributor

Also backed by Compute Also backed by Compute Weekly's sister journals Spiter International and Practical Computing, the Trade Show is a tricted to visitors from third proveodors — the so-called independent sales organisations. These in the companies which then sales to users More details on the Compte

Trade Show 83 are available in exhibition manager John Ck, IPC Bxhibitions, Surrey Hous,

#### Welsh backers

A PIONEERING Welsh com ter company has drawn falling investment from the venture at tal subsidiary of the Weish is velopment Agency, Hafres less meet Finance. Called Compast Practice, the company helped in pioneer news management at iniques for television station. also mudifles software at hardware for small business systems, and designs equipment for engineers to design come nents on a computer linked to be machine tools that produce thes.

#### Smaller loss

cations supplier, Italjet, has a turned a 120 billion lire loss for the year, less than half the loss makes 1981. The State-owned comparable med high interest charges in the loss, but has increment turnover by 32% to 930 billion

#### Mitel profits

by Andrew Thomas A NEW British VDU could signal the end of the single-purpose ter-minal, Miltoo Keynes-based Peri-com has developed the technique of multi-bost communication, ena-bling its 7800 range to be connec-ted to a number of different com-FAST-GROWING telecommunication cations equipment maker his has reported profits of \$17.5 m lico on turnover of \$155 million the nine mooths ended November 1982. This is slightly up on a same period in 1981.

#### Park tenant

led to a number of different computers without modification.

While the concept of emulation of other manufacturers' terminals is not new, the Pericom system involves the use of software emulators stored within the device and selected by software commands. By this technique the 7800 can communicate both synchronously and asynchronously, act as a Prestel terminal, perform high-resolution graphia (1024 × 1024 pixels), and be used as a standalooe WARWICK University's N science park iooks set to draw in millioo investment from high ten nology companies in addition the £1 millioo already provided Barclays Bank for the first billion and the state of the st ing. Biggest potential tenant in Computervision, a leading is maker of computer aided designation of the com actory on the site.

#### Mitsubishi slump

PROFITS slumped at Ispaner electronics giant Mitsubishi is by half-year ended September 1981, Barnings were down 26.5% as is same period of 1981, from \$80 silico to \$59.4 million. The settle was caused by the cost of scoustions and depreciation in the year

#### Decline at DG

THE decline at Data General Christmas with a 79% in profess on the same great in 198.
Sharings were a new or 27 cents a share, compared \$14.9 million, for \$1.40 a best or 25 cents. The slump of the same of the slump of the slu

# ICL gains from 'lost' deadlines

by Jobo Kavaoagh
A GROUP of ICL users have let
down the company over the development of 8 local government
bousing package. But the failure of
the users to meet deadlines could
be a blessing in disguise for ICL.
While ICL own has been forced
to have in a system from Lesson

system, when ready, was to be adapted for the ME29.

Each authority in the consortium is designing and programming one module of the package, while ICL is managing the project and producing the control module.

"Some of these authorities have let down ICL badly," said a senior officer of the ICL users' association. "They have consistently missed deadlines and the system won't appear before 1985 at the earliest — two years late." to buy in a system from Leasco Software, the deal could give ICL a foothold at local authorities which are using other manufactur-ers' equipment. Leasco is to concentrate nn selling the package, which runs as a dedicated system on ME29 computers, to noo-ICL

sites.

The only anag to the deal could be ICL's ill-fated Dilis aystem for handling local authorities' direct labour forces. Dilis is to replace the direct labour module in Leasco's package — but Leasco says it will not take on Dilis until users are happy withit.

The Leasco package, Lohmacs, handles housing administratioo, including accounting, repairs and maintenance and lettings. The company has sold seven systems, mainly on Digital Equipment minicomputers, although the last order involved a newly-converted ME29 version.

ME29 version.
ICL has been under pressure from smaller suthorities for a housing package for the MH29. Work has been progressing oo HMIS, Housing Mangement Information System, for the 2900 series mainframes with a consor-

Versatile

terminal

launch

factory, but we are asking for more details," be said.

won't appear before 1985 at the carllest – two years late."
ICL, it appears, cannot win. It is working with users on HMIS and things have gone wrong. Yet it has been criticised by users for going it alone on the Dilia package for direct labour.

Gordon Crawford, local govern

ment manager at Leasco, said the ICL deal could be "extremely sig-

nificant" for his company. "It ex-tends our market potential quite dramatically," he said.

Crawford added that Lesses would treat Dilis "with cautioo".

"Before we take on an existing Di

lis customer we will want to know be is satisfied with it," he said. "The timescale for our taking res-ponsibility for Dills is oot fixed

spokesman said the committee was checking the Lohmacs package.

"What we've seeo has been satis

Research and developmen that despite the 7800's versatility it is initially aimed at one specific product, with its full potential to be revealed later. The basic 7800 starts at around

1 ne basic 7600 starts at around £1,500," he said.

Managing director Ron Cragg claims that the success of the 7800 range in its first year of production — 3,500 have been installed will account for a major portion of

At a demonstration in Londoo, a Pericom 7800, costing £2,500, was shown taking the place of hardware from DRC, Honeywell, Hewlett-Packard, TBK and others the combined value of for the complete previous year. September show a profit of 5600,000 compared with £400,000 for the complete previous year.

"This is a complete executive workstation," said Cragg. others, the combined value of which was eight times the pur-chase price of the Pericom.

#### Iris chairman resigns

Prospective investors in the Prospective investors from around the Prospective investors in the Investor investors in the Investor in Prospective investors in the Investor in Prospective investors in the Investor in Inves

by George Black
CHAIRMAN of the executive board of Iris, the international computerised news service, has realigned at a shareholders' meeting.

withdrawal from the scheme, but senior vice-president Paul Boekers said in London that costs had been mounting much faster than anticipated and had to be kept under

The international reporting i The international reporting information system was to have a select the formation of the concept being alimined the concept being alimined the concept being alimined the concept has few weeks. So the true one major offers, Times, has been unneed.



LAMB . . , "Saves us having to use cats and frogs."

### Simulation 'saves animals lives in medical research'

The symposium at St Bartholome w's Hospital, Lnndoo, discussed and demonstrated computer simulation techniques in medical training, as well as the practical uses and results of computer aided learning. The aimulations included the cardiovascular system and the respiratory system. Each of the models has a wide range of variables with values based on an extensive number of

based on an extensive number uf real life data. Through simulation, the effects of changes of one part of a bodily system can be seen and quantified on other parts of the system, and allow medical stu-dents to make mistakes without ndangering patients.
One example of cardiovascular

simulation was presented by Joseph Lamb, professor of

by Joho Riley
COMPUTER simulation of body
systems is saving the lives of cats
and frogs, a medical symposium
was told.

He explained: "The circulation
is like a plumbing system — if you
change one variable, it affects
everything else. When the blood

He pointed out that "Compute simulation saves us having to use cats and frogs to demonstrate these

Professor John Dickensoo, of St Bartholomew's Medical Coilege, said: "The use of animals is essenual for research, but for under-standing systems, simulation is justified. I find it slightly distaste-ful to use animals if you can do it

Geoff Perkins, chief training officer of the National Health Service, found it "refreshing to see such a high degree of innovation going on, with people almost prepared to stub their toes and experiment. This shows that ideas are not set in concrete and that this is the way shead."

#### The new desk-mountable GEC 4150 is the BIG COMPANY SUPPORT, GEC field maintenfoundation for the future of system houses and ince relieves your support risk and ensures the GEC 4150 is backed by one of the world's largest PREDICTABILITY. Supporting 9 high level high technology engineering companies. languages—enabling all your existing programmer skills to be used —the GEC 4.150 is compatible with all other GEC 4000 Series machines and runs Call us in Manchester (061-872 3433), Birmingham (021-327 1829) or London (01-953 2030 ext. 3187, telex 22777). GEC Computers Limited, Elstree Way, both 16 and 32 bit programs. LOW COST. Configurations start at £9250 (end user price) and Winchester disc technology Borehamwood, GEC Computers eliminates special environment costs. Right from the start The new GEC 4150 makes building a system child's play. GEC Comp THE REPORT OF THE PARTY OF THE SEC

#### Industrial group buys 27.5% of CAP Gemini

#### Bank micro contest for young people

by John Riley
TWO more organisations joined
the IT competition for young
people bandwagon last week.
Williams & Glyo's Bank
launched a competition for 16 to
19-year-olds working in industry
or on sovernment spaceaged. or oo government spooacred schemes. If they can describe bow microelectronics can be used efficiently in their firm in 100 words, they stand to win £1,000. A total of about £3,250 is offered in prizes.

Also last week, BP drew up a short-list of 21 schools for its Build-a-robot competitioo. Schools had either to design a ro-

Schools had either to design a ro-bot that will retrieve and return a-cube to a specified place, or to make a mobile robot for any cho-sen task. Each of the schools now gets £100 to help them complete their cotties and go nn to compete for a further £2,000 in prizes.

#### Inmos delay

From front page

funding Inmos has received and to

A RESTRUCTURING of France's leading software house, CAP Gemini Soget, is underway with the purchase by Compagnic Gierarie d'Inchustrie et de Participations (CGIP) a. holding group whose subject of the Credit Lyönnais and the purchase by Compagnic Gierarie d'Inchustrie et de Participations (CGIP) a. holding group whose subject contains, fertiliserts, intchinery, due in the subject of the Credit Lyönnais and subject that no more public minors in the subject of the Credit Lyönnais and the subject of the Credit Lyönnais and the subject of the Credit Lyönnais and the company's future law eventual to the subject of the company's future law eventual to the subject of the company's future law eventual to the subject of the company's future law eventual to the subject of the company's future law eventual to the subject of the company's future law eventual to the subject of the company's future law eventual to the subject of the company's future law eventual to the subject of the company's future law eventual to the subject of the company's future law eventual to the subject of the credit Lyönnais eventual to the proposed of the Credit Lyönnais eventual to the proposed of the Credit Lyönnais and the purchase by Company of the company is future law eventual to the subject of the credit Lyönnais and the subject of the credit Lyönnais and the subject of the credit Lyönnais and the company's future law eventual to the subject of the credit Lyönnais and the company of the company is future law eventual of discussions on the purchase of the company of the company is future law eventual of discussions on the entire purchase of the company of the company is future law eventual to the company of the compan

# Jacquard users

by George Black
TEN months after the takeover of Jacquard, the word processor makers, by ATV, production is still not flowing smoothly, their users have alleged.

Londoo-based Business International has been waiting since July for delivery of J100 equipment.

"Now we have been told we shall get it by the end of the month, but I don't have much confidence," said BI's Angela Cassidy. "We are expecting a multidevice adaptor and more screens for our word processor and a Sila-2 communications board, so we shall be able to communicate with our roachest of the communication and cost a lot of time and effort."

Landoo-based Business International was continuing to make some of the hardware.

ATV made the J300 itself and bad oo trouble with getting J500s from AMI; but the top-of-therange J100 hit considerable difficulties.

Gordoo Skinner, of MBS in High Wycombe, a large Jacquard distributor, said there had been delaya of several mooths.

A spokesman for ATV in California admitted, "We've bad ou share of hiccups, but are confident they will be overcome next moot when we take over production our owo plant."

The \$100 million comment

# Six-month delay irks

oack our production and cost a lot of time and effort."

The \$100 million company Applied Technology Ventures of Santa Anna, California, bought Jacquard from AM International

## They were siso planning to set up an assembly operation for the J500 in Ireland, under the title of

### European office systems market 'explosion' forecast

oetworks and computerised PABXs, from \$30 million of revenue last year to about \$110 million in 1990.

The growth of the market is being spurred by the fact that office costs — labour and rents — are going up faster than inflation in general, it is argued.

Although the relative positions of West Germany, Britain and Branch are not expected to alter, much will depend on the comparative levels of government support and the state of the national economies, say the malvets, A sufficient to will be the privansation of British Telecom, while West German and Swedish commits.

home admin

A SOFTWARE packages nursing home administration soon to be marketed by a recomputer firm. It has been a veloped by Brian Jupp, a may home owner in Worthing, a computer salesman Neil Edward Their company, PSI Company, in talks with four manufacture for rights to the system collection.

for righta to the system, called

system





IBM, attracted by tax concessions and government grants, is setting up a software development centre in Dublin. It will atart life in the corporation's Dublin offices, but IBM will build new premises for the operation as spon as a size in

the operation as soon as a site is

chosen.

Recruitment will begin this spring, and the centre is expected to take on 50 suff by the end of

Personal Computer.

A software publishing department has been set up within the company to cater for independent software companies and individuals, and a number of established software suppliers have been named to supply packages for business and home uses. Micro Focus, Digital Research, Peachtree, Vialcorp and Microsoft lead the list.

Finence of the programs of the programs.

Micro Focus is to supply its Level II Cobol compiler and runtime system for the PC running under the PCDOS operating system. It will complement its new Personal Cobol language, an interpretation of the programs.

he list.

Finance and budgeting will be building "mainframe-lever count handled through VisiCalc and programs.

Miero Focua' Peter Hewitt

As in the States, the advanced diac operating aystem from Microsoft will be used to support PC programming, which IBM says will allow easy transfer to the PC of

Text processing and storage can

Text processing and storage can be carried out by Hasywriter, an Information Unlimited package.

Digital Reaearch, in an aggressive move, is to market a £42 version of the CP/M-86 operating aystem. In the US, the O/S, which has a million users worldwide, was available for the PC only through available for the PC only through IBM. Digital Research president Gary Kildall says the company's own version has several enhancements and is one-quarter the cost

IBM has followed the tack it set in produce a LOGO interpreter - a the US in formulating a software strategy for the UK launch of its Personal Computer.

A software publishing departing the UK launch of its will come out in April. Kildall said it was designed for the first-time user as well as for experienced pro-

claims the package is as easy to use as Basic but many times more

Personal Cobol is based on Micro Focus' Level 11, the only Cobol for micros certified by the will allow easy transfer to the PC of a whole range of popular applica-

Peachtree Software, now a subsidiary of MSA, Management Science America, has announced that, as in the US, its accounting packages will be on the PC as well as its spelling proof reader, list manager, PeachCalc financial modelling tool and its colour

Business Management Systema written in Micro Focus Cobol. The PBMS programs await announcement of greater disc space on the PC.

#### Mainframe power for **VisiCalc**

project qualifies for corporation tax at 10% instead of 50%. Under the Irish Industrial Development

Dublin development

Mike Kos, managing director of IBM Ireland, said he was confident he would be able to employ mostly Irish staff. Many of them will be new gradulates.

The software developed in Ireland will be exported to IBM's companies around the world. It will consist maioly of administrative and control systems for IBM's tive and control systems for IBM's own equipment. The Dublin operation will be the third such

centre; the others are in Portsmouth and Uithorn, Hol-

Authority's grant policy, software counts as manufacturing industry for this purpose. And the firm can also claim grants of up to 50% on its fixed capital investment as well as up to IRE7,000 per employee.

The announcement of the scheme was made last week by Ireland's Industry and Energy Minis-

IBM already has other Irish branches at Cork and Limerick and three customer engineering Execut centres elsewhere in the country. IBM Ireland's revenue in 1981 was ment.

centre for IBM

LONDON software bouse APL\* Plus has brought in a mainframe package compatible with VisiCalc, the most popular micro financial spreadshect system.

Called ExecuCale, It is intended to enably VisiCalc users to benefit from the power of an IBM mainframe.

ExecuCalc is designed to allow processing of larger spreadsheets and multi-user applications through standard IBM file-sharing software.

INFORMATION TECHNOLOGY and OFFICE AUTOMATION EXHIBITION Barbican, London, 22-25 February, 1983



## **Banking system** 'upstages' Midas

raphics.

Later Peachtree is to add its A NEWLY-FORMED subsidiary

The company is to be called Business House Systems, and its first brainchild is the House system. The designer was Archie Reid, who devised Midas, the banking system from BIS, which became the field leaders.

Midas originally was designed for a System 32 IBM minicompu-ter, and handles small banks' ac-

System 34 and 38.

Business House Systems' chairman, Hamish Donaldson, claims that the growth of transaction

processing and management in-formation in the past decade has created room for a more powerful "House is intended to bandle up

first brainchild is the House system. The designer was Archie Reid, who devised Midas, the banking system from BIS, which became the field leader in the late Sixties and Seventies.

Midas originally was designed

"House is intended to bandle up to 1,000 deala a day, a figure which we are regularly achieving two days a week now. The other main feature of House is that you can use the same software for all machines, from the 11/23 up to the 11/70. This means it will be useful for a System 32 IBM minicomputer, and handles small banks' accounts outstandingly well. It has aince been expanded to run on the

#### Monitor

A COST and efficiency system IBM users la being marketed by Californian company. Runsal under VS with VSAM and TSO CICS/VS, the California Soften.
Company's Netman monitor all
firm's computing operation.

## Cobra takes over Cobol Manager

UNCERTAINTY about the future of a number of ICL products that dates back to the merger with Dataskii, is being cleared up by its new slim-down-and-hive-off software policy.

1968 under the name of Cobra.

Software manager for Pleagey
Liverpool at the time was Jim Hamilton, who later joined ICL sand persuaded it to buy Cobra.

The penerator was used to maintenance of E100,000 in its first full that it is likely to the cobol manager of the Cobol ma

software.

Managing director Barrie
Webster said executives who might be relucetant to adopt the donic tryourself approach of a micro would appreciate the power of ExecuCale supported from their central data processing department.

The licence fee will be £3,000,

The generator was used to translate 2900 programs into 1900 Cobol. When Hamilton left ICL and set up his own company be supported Cobra with libraries and macros. Now CSP has taken over all aspects of marketing and support for the generator.

CSP became a limited company interface for DMB users.

large organisations running mainframes and smaller one will Hamilton says its selling purious will be possible productivity say of up to 50%. He adds that (2) has introduced new teleprocess facilities that provide a single interface for VMB, TMB

of £100,000 in its first full in its

Reyond the Computer Roc At Info 83, you'll see Jachnology and techniques for business that go beyond : inframes, beyond mictos.

The Info 83 Show features communications systems and services - from videoles to low-cost moderns, from intelligent copiers to electronic mail. See and assess COM. data entry kit, voice and data message switching, digital PBXs and more.

Of course, livere il be peripherals, minls, micros, software and much more, all of digital PBXs. interest to D.P. professionals.

But Info 83 really shows your information managers how to manage. Entrance to Info is free; just mail the coupon, for complimentary tickels for you and for your colleagues,

And go beyond the computer room. To Info 83, at the Barbican, February 22-25 in the light the last the parties of the Barbican, replants of the Bar Please send me complimentary tickets and your Info 83 show pack

Billease hote that parsons under the age of 18 will not be admitted:

8.5.0 Exhibitions Lin 44 Walington Solvare, Walington, Sorrey SM6 BRG. CHIROL

## Apple puts its future on the line with Lisa

APPLE last week firmly nailed its single to a new mast. With Lisa it is setting out into uncharted territory where way out on our own in the personal office system marstyping office worker to use. Particular items are presented as city Apple III."

It has been developed on it.
Hoffman Roche micro, the key
tron PSI-80. "Two and a half years and "We are looking to be somewere looking for a conget system to run our home, which 60 staff," said Jupp. "We feel there just wasn't one, so I see he writing it myself."

#### Pay package

A PAYROLL package for we with the Unix operating spar has been produced by Rost Co. puters of Londoo, CPAY, wear in the C language, can had: payrolls of up to 10,000 employs on DEC'a PDP-11 range take Unix System 111. Including pro-sions for the new Statutory ar Pay scheme coming in this April will cost £950 for implementation the 11/23.

#### Show launch

AN insurance brokers' package in Philips new P3500 micro in launched at the Which Companies how in Birmingham. Writing it Humae Software Services of Residents ford, Essex, It la the outcome collaboration with experts it is the British Ingurance Broken socistion. The first turnky was on the P3500 to be introduced Philips, it will cost from 1978 t £12,900.

is lagging

IT is boom time for US micro maker Altos Computer Systems. The latest addition to its range of multi-user microcomputers, the low-cost 8086-based 586, has been bringing in nearly \$3 million of bookings a week, taking the company well within sight of the magic \$100 million a year turnover.

"We are now doing over \$90

JOBS . . . The beard has gone. Will Apple follow if Lisa fails?

\$3m a week

Altos boom

but UK

"We are now doing over \$90 million a year," says founder and president David Jackson, "and orders are still pouring in. It's all sizzle out there." The \$86 took off far more than Jackson expected, as did the 68000 machine at the top eod. They are dragging the 8600, an earlier 8086-based machine, along with them.

But UK performance is not as good as Jackson would like. "We're shipping around \$1½ million a month retail value in the UK, but could be doing more than double that." he says

double that," he says.

He feels he has been neglecting the UK a little, deaplte being a Yorkshireman, but is intent on

changing that.
Altos has its own office bere, premises in Crowthorne, and sells through two distributors, Logitek and Microtex. Jackson is looking to increase the number of outlets for Altos products and to bring in more "good solid OEM custom-

It's not so much that I am looking for more distributors or dealers," Jackson says, adding that he has no doubts about his present distributors. "I'm looking for more market channels, and to service them however is best."

The way he plans to do this is by The way he plans to do this is by increasing the variety of operating systems available on the machines, to pick up business from existing devotees who are looking towards the micro market. Already Altos 8600 machines support Xenix, MS-DOS, CP/M, Oasis and Pick, and tho 68000 models run Unix and RM/COS.

Centre opens

THE Netherlands has opened a national centre for sub-micron technology at the Delft University of Technology. The centre will be used for research on VLSI chip production, using X-ray, electron beam and lon beam equipment.

Micro News is compiled by Robert Parry.

#### US lab kit maker plans move into **UK** micros

essential parts of any office-oriented system these days.

It is not just these applications by themselves that make Lisa special, it is the way they work

together and the mesns of getting

Information can be passed around the system as easily as pointing. Data from the

spresdsheet can be moved into re-ports produced by the word

processing application, transformed into graphs or charts, filed

a "waste bin", all by using the mouse to move the pointer around the screen. The whole approach is one designed to keep things as

81 them that really count.

US MEDICAL and laboratory equipment manufscurer Instru-mentation Laboratorica, 1s planning to move in on the UK OBM micro business. IL'a Pixel division, set up initially to put microprocessors into its existing quipment, branched out into microcomputers last year with a 68000-based Unix box, and is now touting for custom in the UK, Under UK sales and marketing

director Jan Klin, the company aiming squarely at the OEM and systems house market, not the end user for the time being, and reck-ons to win them by offering big discounts while not asking

The machine, the Pixel 100/AP uses a Motorola 68000 as the main processor, with a Texas Instru-ments 9900 looking after I/O operations. It comes with e minimum half-megabyte of main memory, expandable to six mega-bytes, and up to four 40 Mbyte Winchesters with tape or floppy

It has been selling in the US for

Klin reckons his OBM deals will be predominently with traditional minicomputer OEMs. Already Quantime, the DEC/Prime OEM has bought US machines.

nas bought US machines.

Klin sees mini vendor OEMs having a hard time ahead, particularly as manufacturers like DEC move more into various vertical markets themselves, leaving less for the OEMs.

## **Dutch sub-micron**

ketplace," says Brian Reynolds, product manager for Lisa in the UK. "Lisa is a new concept, much "papers" stored in "folders", and graphically represented as such on the screen. All the user has to do is more than just a 16-bit high capaposition the pointer over the selec-The key to Apple's spproach with Lisa, which is said to stand for Locally Integrated Software Architecture, is the application ted item on the screen, by moving the mouse around on its ball bearing, and press the button on the mouse once or twice. It is all software embedded in the supposed tu mirror the way a busimachine's huge operating system.

machine's huge operating system.

Six business applications cover financial modelling, list management and project scheduling, as well as the word processing and graphics facilities which seem to be essential marks of many office.

Even the floopy disc units have been redesigned for user-friendliness. The drives have no doors, and all the user has to do is push a und all the user less to do is push a disc in. Disca cannot be removed in mid-flow - only when removal will not lose data.

The idea is essentially the same as that used by VisiCorp with its VisiOn product. This, too, is an operating environment pulling to-

tions programs for word processing, spreadsheet analyais,

graphics and so on, but is not at-tached to any particular machine. It will appear first on the IBM Personal Computer, followed closely by the DEC Professional microcomputers, and a motise - with two buttons this time - is the only additional hardware. Both Apple and VisiCorp are convinced that this route into large

volunie office customers will work. Apple, nt least, has to be. It lius invested so much in Liss, and the different versions of the basic concept that are bound to appear in the nnt 100 distant future, that it cannot afford to get it wrong.

As Apple fnunder Steve Johs notes, Apple only had \$1,500 to lose if the Apple II did not take off after its launch. This time, if Lisa fails, Apple stands to lose the lot.
Lisa is expensive, coming in st

The Lisa view of a desktop on your desktop.

the summer. This is a lot, even allowing for the hard disc and third parties will need tailoring to allowing for the hard disc and printer included in the basic system. A new approach to selling the system will be needed and Apple envisages a network of between 50 and 100 dealers in the UK to handle Lisa.

They will not necessarily all come from Apple's existing dealers. There will be no direct sales by Apple.

The system does not run parti-cularly fast, despite the prolifera-

စိုင်စိုင် **⊕**©©⊕• around £8,000 when it appears in tion of miemprocessors, and any

File/Frink Edil Format Cailmaigs

fit the made-to-measure suit Lisu wears. A tool kit to allow software developers to integrate with Lisu's features is promised for launch time here, and Digital Research is working at taking CP/M on to the

The first language available to software developers on Lisa will be Pascal, followed by a Basic akin ro DEC Basic and Cohol from Micro

## CUMPEG The leading Scottish computer show SCOTLAND'83

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# Racal shares slide 62p on profits shortfall

Racal upped profits up by only revesled.
22% to £46.9 million? Turnor

recession since the Thirties, according to Sir Ernest Harrison,

One messure of how bad it is, said Sir Ernest, was a stall on £65 nillion worth of electronics goods already ordered and originally due for shipment in 1982. This left the company facing a miss on its ambitious target of £800 million in turnover for the year.

Sir Ernest made no mention of the likely effect on a specific profit projection, but the chairman's gloom, combined with the ambiious expectations of the City that Racal would make it to £50 million for the first half, was enough to

Turnover for the Raesl group ss s whole rose to £359 million, com-pared with £303.5 million for the first balf of 1981/82.

million, was a net exporter of £330 nullion worth of defence and other electronics goods for the year.

In addition, oversess subsidia-ries of Racal, chiefly the two subsi-diaries in the US, Racal Milgo and Racal Vadic, sold £220 million of product. It was clear, however, from Sir Ernest's comments, that in the data communications in the dats communications area which secounts for fully 29% of Racal's business, the company was facing a tough market. Price competition in the modem

field was particularly strong, and the chairman said there had been

Racal Inst year supplied over 325,000 moderns in the US, where the business is still banning in cample of the situation is the

In an effort to diversify further in the States and reduce dependence on the modern business, Racal recently bought Magapulse, the Bedfordshire, Massachusettsbssed radin and navigation equipment company.

The purchase enincided with Rscal settling a year-old legal wrangle with Philips in Halland over payments for the use and maintenance of Decca navigation services as aids to navigstion,

Racal bas a number of interests in the computer industry. The most important of these, Racal Redsc, which produces computer aided design and manufacturing equipment, had a bad year accord-

He said the expected boom in

Racal recently broke of a nimed at linking Quest, Car-and Racal Redac into a made CAD/CAM supplier.
Although Racal appear

mitted to the idea of CADE there were no hints as to min Ernest thought the situation

Despite all the gloom, how Racal's cash position control improve and Sir Brust page that the company would ke end of the year, Stockbrokers seemed to the

## Private placing the only way out for Inmos

Technology Group, under government pressure, is putting to financial institutions in the City later

this week.

Both BTG and the government see a private placing of shares in Inmos as the only exit now available from the dilemma facing the company as it gears up for volume production in Colorado and starts production of 16K RAMs and 64K RAMs in Wales.

twofold - on the one hand cash, on the other confidence.

on the other confidence.

As production rises, so does the need for cash. Even with the BTG's recent additional funding of £15 million Inmos bas nothing like the kind of liquidity it needs to compete internationally in the memory chip market.

Sir Frederick Wood estimated that Inmos would need £50 million to go international with volume

This is the question the British investing that kind of money in

The British Technology Group, which owns 72% of Inmos, says the Colorado Springs plant will be profitable this year, and the fac-tory in Wales will be in the black

Group is prepared to guarantee the

This the BTG should he able to do if the Group's confidence in Inmos is as atrong as the certainty with which the BTG has been saying that Inmos met all Its 1982

say what those targets were but overall the company shipped £14 millon worth of product, princi-pally 16K dRAM chips in 1982. How much came from Wales, and how much from Colorado Springs,

WHAT price a company which has cost every man, woman and child in the UK £2.50?

Either way, the aum involved is large, and last year the financiers are no profitable justification for the US, and turnover should have at least doubled.

by early 1984. According to the City men, early needs to he "very early" and it is unlikely the BTG will fare any hetter this time round unless the

prospectus being sent to the finan-cial institutions.

Neither Inmos nor the BTG will

But so will costs and the need for financing inventories, de-

liveries and production.
The BTG statement about profits ble trading operations must also be seen in the light of any borrowings Inmos will need to raise, In addition to the existing

It is unlikely that the company will be able to service loans and

make an overall profit as well.

The second dilemma facing Inmos, is credibility. The departure of Paul Schroeder, one of the founders, and the controversy surrounding the volume of funds already given to Impos. not to ready given to Inmos, not to mention the failure either by the company or its backers to explain clearly why the recent £15 million was needed, heree all taken their toll on confidence.

More damaging, despite the company's fair protestations of political interference, was the failure to meet the original volume

## The City, which last year rejected a bid by the BTG to get private funding for Inmos, came up with a figure of £40 million. The City, which last year rejected a bid by the BTG to get how much from Colored Springs, and production targets set for Inmos. By the end of 1983 Immos Brake on electronics R&D

by Kevan Pearson

THE electronics industry is still increasing Irs R&D expenditure despite the recession, but the rate of increase is slowing down, according to a Confederation of British Industry survey.

While the electronics sector upped its R&D spending by 14% between 1978 and 1981, in the rest of the economy was distinctly flat, according to the economy was distinctly flat, according to the CBI report R&D

In Recession Too?

The report also shows that be a result of increased economic ac.

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The report also shows that be a result of increased economic ac.

## Mini specialist moves into micros

HULL-based DEC OEM Alveronics is to move into the micro market this year. Managing director of the minicomputer specialist. Alan Coates, said it was looking at a number of proposals, including working with DEC again.

Alternates has a treatment are directly and High Wycombe centres that the Hull, Bradford and High Wycombe centres that the high with the move of proposals including the next year. The move for the past was a first the high which will be made the man further.

The tax tentings of the light was a supplied 46 commercial minimal was the past was recommended to the past was a supplied 46 commercial minimal was the past was recommended.

pared to 30 the previous year. This had been achieved without any more staff.

more staff.

Pive engineers had retently been taken on for the technical products division and five more were needed for site preparation, natallations and maintenance. They were also recruiting three analysi/programmets for software development and could need two or thirds thore during the season of thirds thore during the season of thirds thore during the season.

### OSBORNE . . . Set to join ranks of the very rich. First sales

of Osborne

IN JUST over two months' time, Adam Osborne should be s very rich man. Osborne, the expstriate Briton turned computer entrepre-neur, will be making the first sales of stock in the company founded just two years ago.

The move, which Osborne sur gests is to raise more cash as he begins to develop the company away from the single product which has made its fortune, is right on schedule in terms of Californian ventures against assertions. fornian venture capital operations.

The company was initially financed by a mix of funds, some from Caborne himself and some from traditional venture capital sources in California.

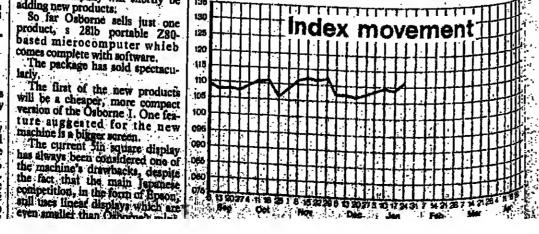
The bulk of shares in the company are still reckoned to belong to Osborne. The Wall Street Journal suggested last week that the Os-borne stock would be the hottest thing to hit the US market since Apple went public two years ago. Osborne has not revealed details of the stock sale, but has indicated that the company will absorbe

that the company will shortly be adding new products;
So far Osborne sells just one product, s 28lb portable Z80

The shares tuble, which is specially compiled for Computer Weekly to

		Enchange	1					ļ	
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The table thous the cloting prices in Landon on Friday and in America on Thursdo, In-Index is based on the prices of the UK companies in the table. Highs and Loon best in



## Turnover at PPL up 54%

by George Black LONDON software house hi age Programs pushed in ansup to £2.75 million hat page record 54% increase. Inc doubled to just over 1900 with misjor orders from 1 Xerox for Kenya, Singapor New Zealand and from Sole

Now PPL is looking worldwide agents for its have

#### SHARES TABLES

relected computer companies that reflect the state of the computer being

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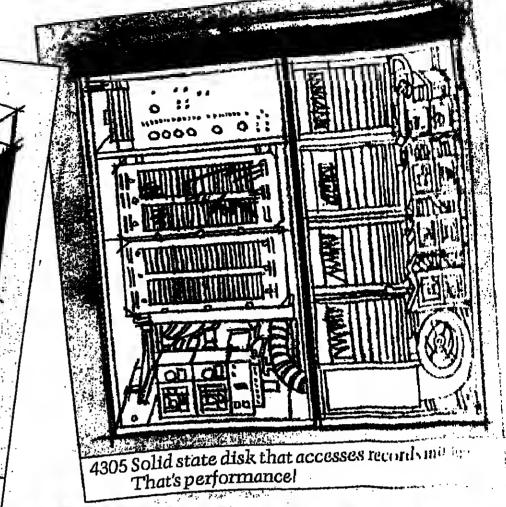
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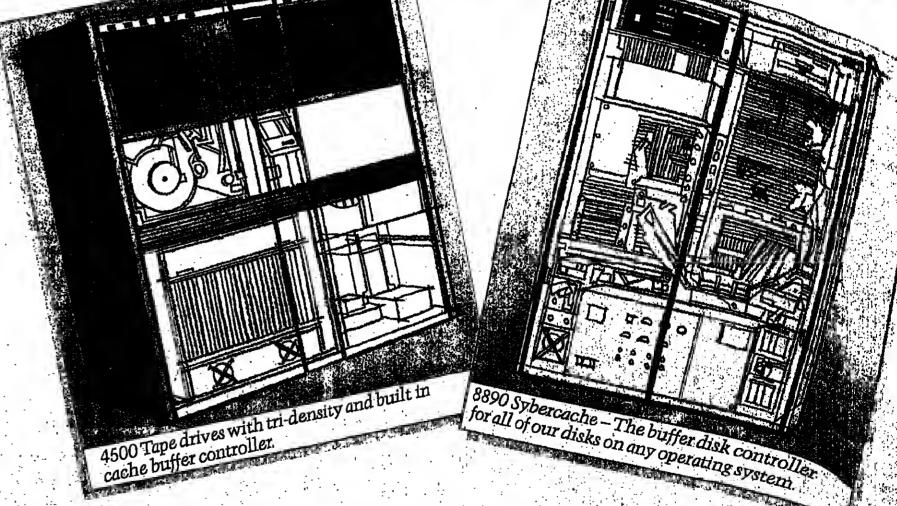
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products.



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## So you think the staging of an IT exhibition is a doddle?

YOU might think that organising an exhibition at the Science Mu-seum would be a doddle – just tell the various manufacturers you wsni to show their kit, and they queue up in their hordes outside

your door.
Simple, isn't it?
Dr Oliver Strimpel will tell you s different story. He is Curator for the Mathematics and Computing collections at the Science Museum, which includes the archibits includes which includes the exhibits inside the gallery. He is also the unsung hero of the IT82 exhibition which

took pisce there last year.

The show proved to he a fine halancing act, given the short timescale the Department of Industry allowed to get the exhibition off the ground.

"It was quite a logistics problem getting all the exhibits together, but we were lucky to have the backing of the IDOI in our approaches to the manufacturers," says Strimpel.

Even though the Dol lent some niuscle, it was not all easy going. All the companies were keen enough to provide kit, but they wanted to provide it off-the-shelf without the bother of modifying it

for unattended operation.

It took a lot of persuading on Strimpel's part to have the modifications made. In one case the Science Museum bad to write its own software in order to drive a Hewlett Packard grsphics tablet.

Quite a task when you realise that the exhibition had to cover as wide a cross-section of technology as possible - from Babbage's difference engine to the Kurzweil reading machine for the blind, banking amotellers, live weather DOWNTIME

basically exploitation masked by a thin layer of glamour, the Morleys

are to offer the girls a way out of

the cattle market and on to a career

This year contestanta will ait a

computerised aptitude test to find out if there is anything useful they

Cyber 1000, was announced by Control Data . Minister of Education Margaret Thatcher visited the ICL systems head-quarters at Bracknell

REACTING perhaps to criticism that the Miss World competition is

could do after the show. And the winner — if tests show she has the flair — could be offered a job by plot by the MSC to privatise Tops?

Sordid tale from Japan

THE footsteps of truth are grad-ually covered over by the sifting sands of bistory, especially when

But his auccess, after an intrigu-



vision videodise aystem, which happened to be the most popular

And that was only half of it. The other half was organised by British Leyland showing things like the production of the Metro at its Longbridge plant. This was not just about the use of spot welding robota (only a film, actually - it would not be wise to have sparks and molten steel flying about and setting school uniforms alight), but about the whole story of information technology at British Leyland, including the use of computer sided design, telecommuni-

Last year's winner was a compu-

ter engineer. It seems she must have been whispering sweet some-

things to the organisers on the subject of information technology. At any rate they have decided to

put a computer into the Royal Al-bert Hall this year to collate the

He is now engrossed in pre-parations for the opening, in mid-1983, of the National Museum of Photography, Film and Television

turn on the finance provided. Bank finance is normally available opened in phases. Strimpel will be responsible for the largest of the main galleries to be opened in the first phase, which will be devoted At Barclays, in addition to the usual overdraft or loan, we have our business start loans with

mages received by an antenna on the roof of the museum, such as those shown at IT82. What we A 'date' for Miss World GALL ME A DATH INPUT OPERATIVE, INSPECTOR,

industry

- a total of £30,000.

There will be seven 15-man

teams from each of the organisers

- Kalamazoo Business Systems,
BL Systems, Rowntree Mackintosh, Compower, Barclays Bank,
Forward Trust and a motley collection of Compowers The

want to get across is that photographs taken by optical means are not necessarily the finished pro-duct any more." Heart of the

monthly profit and loss, stock control, debtors analysis. Operators manuals are normally lengthy tomes. A short description of the system will suffice.

The market. Who is the customer and wby? What is the comparison in principles. THE computer industry will set us all an example this Easter when 105 of its members jog a total 6,020 man miles for charity on the road from Lands Bnd to John O'Groats. The runners aim to convert each mile run into £5 for the British Heart Foundation and Arthritis and Rheumatism Council — a total of £30,000. tomer and wby? What is the com-petition in price/performance terms (including non-computer systems)? Is the price correct in relation to the value of the pro-duct? If the price is too high some potential buyers may ask for a discount; if the product appears to be too cheap some will be put off

**PLATFORM** I

Improving the

lives. Profits must be high and

money back plus an adequate re-

provided the ability to repay from profits is adequately demonstrated.

royalty payments replacing in-

terest charges, business expansion loans for second round financing

and loans under the government

So, if the money is available how is the banker convinced?

The information he needs is

usually presented in a written business plan, detailing product, mar-

ket, management, profit and cash requirement forecasts. This docu-ment is the RS232 or the interface.

The product. What is it? What does it do? What is the customer

buying? A simple description, pre-ferably illustrated with specimen printed reports auch as an invoice,

guarantee scheme.

Opening the Computing Series
Association Software Flue
ing Forum in London and
this month, John Bucket, he
iiamentary Under Secreta
Department of in-

Department of induling atressed the need for the six ware industry to import a communications interface to the finance world.

the finance world.

Jon Sanders, manager, Back.

Bank, 5 Oxford Street, it also spoke at the form, is

might plan to recover all course, the first two years' life of the po-

duct. For our example this well

Now we come to the many

previous experience have the me

agement had in running a busines. Can it market its product? Can:

manage money, accounts and no pany procedures? If the business

established then the evidence

should be readily available & for

ancier is relying entirely on the management's ability to rank

business profitably to ensure it

And now it is time to standied

and ask: "Is this the best wy fe-

ward?" In order to recover the bit

has to be invested in two year's trading and only then will thatk

any real return for the owner of

duelng the investment and

bringing forward the monest if

be to seek a liceoce agreement sin an established software distribut

who has an existing mailing all and advertising space. He may no be able to make the software non

portable to other machines my

operating systems, thus wideled the market without addition

investment. The charge made of the distributor will vary scoring to the work done and the type

product; for our example we #

assume a 40% turnover payment the distributor, excluding the D

So in financial terms the

licensing deal requires no furled

business and allows them to me

fully capable of both developed and selling software but the larger ment needed to achieve results in short time scale is very large full

The software industry is a chile

Jon Sanda

technical jargon.

Contribution per unit
Pay back in units

One possible alternative wol

business. Is there a way at #

Initial investment
Forecast fixed costs
Total forecast costs
Contribution per unit
Payback no. of units

be too cheap some will be put off be too cheap some will be put off further enquiry.

For costings and profits, "one-ofi" costings are the simplest to present, even if some items are bought in larger volumes. For a software house the only variable costs (le, per sale) are the storage media, usually a florery dis-

media, usually a floppy disc costing £1-£3, an instruction manual and despatch costs. Let us take as an example a new software bouse with one product in planned to sell to distributors at \$200. The initial costs incurred to date are calculated to be £20,000 (which includes time, not charged to the business areas on deinvestment, it achieves payed and real profits more quickly in also releases the management has the task of running a distribution to the business, spent on developing the software). Firstly we duet now, not when this one is the end of its life. must calculate the contribution of the end of its life.

Of course there are many

Unit sale price Unit variable costs Contribution per unit

young company, the alternative such as licensing, joint venies, wholesale agreements, sale of tenterial rights should all be considered before selecting the bisiness strategy. So unless 105 units are sold in Year 1, a loss is being added to the initial R&D costs. But to be a viable business proposition all costs must be recovered over a star out-performing most one sectors of the economy in his clays we have recognised the achievement and our High Tale nology Unit in head office helps bankers to understand softward technical leaves. pariod somewhat shorter than the forecast shelf life. This can be anything from a five minute wonder to a product which will be around in ten years, although it will need constant modification and im-If the shelf life is very short the

I hope that my comments all help the software industry to the derstand the language of the sales growth potential must be ra-pid, otherwise the product runs out of steam before the costs are ance world.

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

### Counting the cost of data protection

THE Data Protection Bill, such as it is, can be said to be weil on its way to enactment - despite serious misgivings from people of all shades of political opinion.

It has been criticised, with reason, for being the minimum legislation which the government could get away with and still fulfil the requirements of the European Convention for the Protectioo of Iodividuals, which was signed on the country's behalf by the Home Secretary.

Whatever the merits of the Bill, and its shortcomings, there is little doubt that it will be welcomed by Britain's computer industry. Without it, UK companies which operate in Europe would find major constraints on transferring their own commercial information from those European countries with data protection legislation to their British headquarters.

For the major international bureaux and database purvevors it would force a stark commercial decision - they could either give up their European business or stop proces-

It has been left to local government in the form of Lamsac (Local Authorities Management Services and Computer Committee) to come up with the first solidly-based estimate of the likely cost.

million a year for two years to comply with the Act, according to Lamsac's figures. And at a time when local government spending is being curtailed, the authorities are understandably worried about paying this cost.

could be immense and they should start to count that cost.

As should the government, which so far has limited its view of cost of the Bill as only the administrative one of

to assume that the country must pay the cost and therefore

steel chips", as ooe industry commentator did this week, may seem frivolous. In fact it is almost lrrespossible, given that the very small volume of product which has appeared from Inmos has cost the UK taxpayer a straight £100 million so far, and a further £15 million, If the money is finally

this is the very heart of the speculation and controversy surrounding the company - no one knows.

employment goals have been officially identified for the

met its goals for 1982". What were those goals? "Ah well, we can't reveal those - commercial confi-

dentiality and all that" is their stock answer. With £100 million of public money down and £15 million

to go that is treating the public as a bunch of idiots.

agement cringe when comparisons are drawo between the company and the inglorious De Lorean car company affair. But that fiasco was at least partly due to a failure of public accounting arising primarily from the secretive way the company went about its actual business.

#### 1984 and all that . . .

wins 65.
The power of a 32-bit computer is illustrated by comparing it to 8-bit computers — a "bit" being the number of digits of information a computer can handle at one time.

Office Equipment News

Thursday, January 27, 1983

The obvious choice for them would leave the UK's comouter industry much worse off. But while the industry will on the whole be grateful for the Bill, its users will be much less enthusiastic. Because lurking in the background throughout the 14-year struggle to get a Bill to Parliament has been the question of its cost to computer installations.

The UK's 521 local authorities will have to spend £11

If the UK's town halls are worried, the country's other computer users should be as well. For the cost to them

setting up a registrar and secretariat. It is not enough, as the government seems to have done,

## Tell the taxpayer

DESCRIBING Inmos products as "gull winged stainless made available to Inmos later this week.

But what has all this investment been for? So far - and

No production goals, no financial goals and oo confirmed Spokesmen for Immos keep asserting that the "company

Both the British Technology Group and the Inmos man-

This time the public are in for even more money, with even less to show for it. Any new funding must be accompanied by a full public disclosure of just what Immos is supposed to be achieving, and when.

THIS week's example of the strange things people say about computers was sent in by B. F. James of Bracknell, Berks, who wins £5.

#### UK skill in innovation not in producing

Yt)UR editorial (CW, January for BT to fund these two illus-for tunstely seems true, that the UK skill lies in innovation rather application skills rather than fund application skills rather than fund Aston and York to provide new courses in electrical systems eogi-

than producing.

As the recent government reshuffle confirms, it is the product of Oxford and Cambridge that its largely running this country. Perhaps it would be more fruitful

neering (reported in same issue).

#### The meaning of CP/M

AVAILABLE NOW FOR SIRIUS -

IBM PC and DEC Rainbow

coming soon

WITH regard to the letters on CP/M (CW, January 6) it would be natural to assume that Digital Research itself knows the answer.

To this end I enclose s copy of a page from sppendix H of the CP/M Operating System Manusl, published by Digital Research.

This is marked "Copyright © 1976, 1977, 1978, 1979 and 1982 by Digits! Research" and was first printed in July 1982.

Hstfield, Herts.

Control Program for Microcomputers: See CP/M. CP/M: Constal Program for

Microcomputers. An operating system that monages computer re-sources and provides a standard systems interface to raftware written for a large variety of micropracessor-bored camputer

The Editor welcomes letters com-menting an subjects published in Computer Weekly, or on original topics. All leters must be accompanied by the writer's name and address, not necessarily for publication.

Satisfied with systems 1 HAVE just read your report (CW, January 13), on user satisfaction with their systems. I see that IBM and DEC topped the poll

So why didn't Hewlett-Packard get even one mention in your report?

A. J. PACE

of minicomputer users (with signi-A 3.2 satisfied user ficant numbers of responses) with

scores of 3.1 on the overall satisfaction index.

Now by my mathematics, but maybe not yours, 3.2 is a higher number than 3.1 and 33 is a signi-

reporter took into account the foct that 9.1% of HP users would not recommend their system to other comficant number of responses by sny panies, against 4.8% of IBM mini standards.

#### Brixton centre of technology

man asks (CW, January 6), "How Lola Thomas, who manages a Sight & Sound training centre at do we explain technology to the kids of Brixton?". Toxteth, teaching the use of text You should send him along to

our official opening (January 25) and we will show him the start we **DENNIS E. HACKING** Manager, Brixton itec

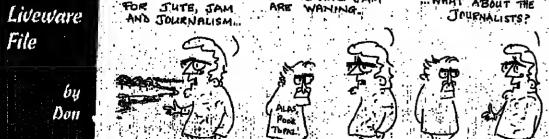
#### Lateral thought saves time

A LITTLE "lateral" thinking will save a step ("pouring") in the algorithm in Puzzler (CW, January

Place container Y inside of X (not a pouring)
2. POURING 1. fill X (and thus Y at same time) 3. (Carefully) take Y out of X

5. Fill Y from X - POURING 3. 6. POURING 4. fill X 7. POURING 5. top up Y from X
- lesving 4 pints in X







a bike

KEBP fit with the microcompute-





# All the latest for these Newsmen

THE words newspapers and new technology do not readily nux in the same sentence. Only a handful—and none in Fleet Street—have introduced intelligent video terminals into their editorial offices.

And none has so far gone the whole hog to single key-stroking with news copy input by reporters

Nottingham Evening Post, spilled all its unioo blood to hring in new technology. The paper is now hereft of union, and blacked by the NUJ and NGA.

No other newspaper has had the stomach to follow the Nottingham Post's draconian example. Union with news copy input by reporters

co-operation has been gently heing edited on screen and then sought, hut little quarter given. sent directly to phototypesetter. It is perhaps significant that the newspaper ahead of the field, the

Something of a breakthrough, however, came at the end of 1982 at the The News, Portsmouth, with introduction of VDUs to its editorial offices to replace typewriters. The move came five years later than at the Nottingham Post, hut with a difference - the unions have given it their muted blessing.

The agreement is for a three-phase approach. Phase One has been implemented at all sixnewspapers of the group and gives reporters intelligent Digital Equip-ment VT 173 terminals linked to two DEC 11/70s. The system is called EMS, Editorial Management System. Phase I also allows for two of the weekly newspapers to he edited on the screen. After additions the system in the editing, the suhs key in the headlines and typesetting instructions to printers.

Phases I and II have both been agreed by the unions on condition that NGA members be involved with input of news copy at some stage of the production process, usually typesetting

stage of the production process, usually typesetting.

The problem comes at Phase III, which is not yet agreed. Phase III aims to bypass the production system hy making the newscopy entered by the reports directly available on file for phototypesetting.

The NGA wants assurances that keyboard operators whose jobs would disappear would be found

market is competitive, and the News Group might be forced to offer new technology also to contract journala, points out Richard Page, chairman of the News Centre's Federated Chapel.

Page seems resigned to the eventual take-over hy new technology.
"Whether you accept technology or refuse, whether we go on the offensive or defensive, there will he joh losses," he admits.

Meaowhile most journalists wel-come the EMS, which already has had ten years to mature in the US

where new technology is more readily lauded as panacea.

"Neither the aubs nor i would ever dream of going back," enthuses Keith Newherry, editor of the Isle of Wight Weekly Post, one of the two main papers in the createst pieceure. One ever place introduce screen the createst pieceure. One ever place introduce screen the createst pieceure. of the two main papers in the News group which already has Phase II.

A reporter at the News, Sharron McQuoid, finds her work quicker and easier with the new terminals, and spares her brain for the more creative aspects of her joh.

Deputy news editor Keith

Howitt Is similarly optimistic, although since his joh is to monitor the flow of stories through the system and amend where necessary, he is frustrated by any downtime. downtime.
But associate editor Peter

Thompson insists that the system goes down only for occasional two-minute spells; any longer would be a liability with the tight desdlines

layout and design of newpage pages on a video screen. The Nottingham Post hope n

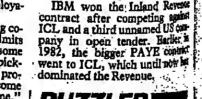
introduce screen layout make dered by unions this year, be allows reporters, who are noto-riously had typists, to transpose two adjacent characters at a single

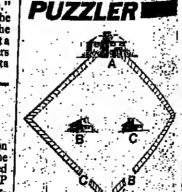


INI.AND REVENUE has a potential management problem after the decision to convert its internal payroli computing, hased in Worthing, from ICL to IBM: The problem arises because the 120 Cobol programmers in the Worthing offices will learn all about IBM to cap their ICL experience—and At present the programment at ICL's Range Cobol based on the Ansi 74 standard. An eight of course is being laid on to court them to IBM Cobol. cap their ICL experience — and become that much more employa-

David Buck, data processing coordinator for the Revenue, admits
managers are worried that some
programmers will leave after picking up IBM experience. "The programmers will probably welcome
the challenge of a new machine."
The burden of converting the
operators lies with IBM, but the
Revenue has gone to Data

Revenue has gone to Data Training to teach the programmers the delights of IBM's VSAM data access methods:







the greatest pleasure. One example is the transposition key, which

Another popular feature is the DEC UDK, or User Defined Key, which allows job control sequences to be enacted at a single stroke. News stories can then be sent downline, or routed to a particular

routed directly to the appropriate section, for example the sports section, for lay-out and printing.

The equivalent of Phase III is already marking at the Marking

The equivalent of Phase III is already working at the Nottingham Evening Post. But there is more technology to come — the sist that no net jobs are lost — it will not always he possible.

most papera will have to wait most cade — if they survive that long.
Yet auch systems have shown

heen implemented in the US, at full colour make-up machine car be hought from the likes of Soin Most newspaper manager with have to console themselves he these machines will have riped further by the time they get then

Meanwhile the unions mu temper their Luddite leaning mi the realities of declining circul-

## The 2,000 consultants who deal in DP jobs

McQUOID . . . No nostalgia for typeturite

hanging job functions and titles, detailed information packages) and the total administration of the re-

WHBNEVER I sttend the annual round of media parties, I am amazed by the sheer number of people earning a living from computer recruitment.

The 350 or so computer recruitment company collects requirements by intense telephone canvassing, generate candidates from general advertising and attempts to push each candidate through the potentially small businesses comprising a large number of "manand-dog" outfits, plus a handful of big companies with 20 or more full-time employees.

The limited information available would suggest that there are at least 2,000 full-time recruitment consultants operating in the data processing field.

In terms of experience, there is no typical recruitment consultant, and backgrounds range from 16-year-old school-leavers to seasoned data processing professionals.

In common qualification of all financially specessful recruitment consultants is a capacify for hard, repetitive work plus the ability to sell in an extremely competitive vertisements arms of the recruitment exercise.

Agency recruitment is a messier process in which the recruitment company collects requirements by intense telephone canvassing, generates candidates from general advertising and attempts to push each candidate through the other 20 agencies to which the candidate might have applied.

The recruitment of company collects requirements by intense telephone canvassing, generates candidates from general advertising and attempts to push each candidate through the other 20 agencies to which the candidate might have applied.

The recruitment of contract saff is done aimost entirely on an agency basis, where a delay of 30 minutes in providing candidate details to the client can often make the difference between success and failure.

Although the acquisition of staff recruitment skills can be useful to the aspiring DP manager, this in a providence is a career move depends are providence in the total administration of the recruitment company collects requirements of an extensive success in which the recruitment company colle

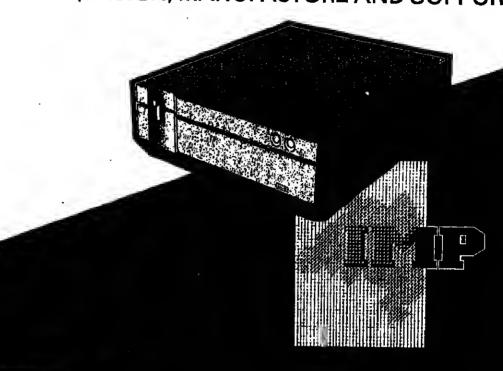
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age and an extensive range of cross-compilers and assemblers. IMP boards are all based on the IEEE-696 (\$100) bus standard and are available separately. For further technical information and prices, contact:

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AVAILABLE

### MD for Cable and **Wireless Services**

vices has named Christopher military two-way radio systems. Weeks managing director. He was

previously parent board director with the Beree Group, responsible for Continental Europe and international marketing. Before that he was managing director of marketing strategies for the telecommunications, computer and maintenance divisions of the company. One of Weeks' first tasks with



continuing success of these major

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Former Extel Computing director Dennia Samuel has joined Consultanta (Computer and Financial) to take responsibility for the project management of CCF's stockbroking agents. stockbroking system Fiscal, and its investment management system



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two years as a sales executive.

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Tony Gray has joined Management Science America as systems consultant. He was previously technical aupport analyst for the Automobile Association.

mentation, control and automation trade association work, Marjorle Powell has retired. She first entered the industry through the British Industrial Measuring and Control Apparatus Manufacturers Association, where she became executive secretary. Latterly she has been director, communications, of Gambica in the UK, which now incorporates Bimcam. Gambica is a federated member of Beams, the British Electrical and Allied Manufacturers' Association.

Computer Systema Development has appointed Gordon Frosdick as product manager, distribution systems. He was formerly group distribution manager

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and future computer allocation IDPM West London to Order branch. Bull Hotel, Gund Seminar implications of the #

Weather forecasting - cur

pointments. Colin Galick is

merly of AGB research wi

Comshare has been appoint marketing manager. Pet God

joins as sales support except lan McLeod and Kevin Wh

have joined the firm as salesmen.

Brian Hutton has joined B Applied Systems as a training the consultant to service the North

MatEval, which minutes automatic ultrasonic investigations, has appointed a new aging director, David Come formerly a managing direct, the GEC group.

Terry Tebult has been spected customer services managed Delta Data Systems. He ionely company after eight year r. Nixdorf, where he was last West branch engineering management.

Beauchamp Computer Symhas appointed 22-year-ald has appointed 22-year-ald has Wickes (below) as a direct. Will have overall responsibility markeding the company't point and small business system have previously in sales with a apecial business division of Rd Xerox.

Cobol standard. BCS Chellense ond Gloucester branch. Canto Hotel, Cheltenham. 2.30. Local area networks. BCS Co.

don branch. Maple Rooss. Fairfield Halls, Croydon 7.11. The computer in court 90 Harlow branch. The North

Harlow. Auditing of computers N Kent branch. Department of Cast putting, University of Kest 1.1 FEBRUARY 9

Mercury — the altername to British Telecom BCS Knowledge Branch. Kingston Polyands Kingston Polyands Kingston Thames, Sunday Intelligent query language a databases. BCS Beliest bank

Ulster Polytechnic. 2.30. Teaching computers & Lodge Park Hotel, Coches.

#### CONFERENCES

AN exhibition of computerhan exhibition of computer-based instruments, called Control 33, will be held at the London Kensington Exhibition Centre from February 15-17, and at the Crest Hotel in Runcorn from Feb-ruary 22-24. It will feature some of the most advanced equipment in the most advanced equipment in the field of industrial and process control, say organisers Francis Tomlinson & Associates, Exhibitors include Perranti, GEC, Burralsown, SPL. International and Westinghouse, The exhibition has been organised in chaluterios with been organised in conjunction with Project Presentations and compli-mentary tickets are svallable from Francis Tomlinson, 38 Ashburn Place, London SW7 41R: Tel; 01-373 3589

SESSIONS on medical in thation processing will be in-uded in the 17th annual Hawah

nolulu from January 46 18 Papers are required from the most ers and practitioners in the most ers and practitioners in the main information processing field in for example, alternative promises ming languages in medical asputing; computers and database management, and database management, innovative applications, Aleman of about 200 words should submitted by May 2 this is appointed Papers should be type and double-spaced manuscrops, it pages long and submitted in pages long and submitted in pages by July 8. The conference sponsored by the University sponsored by the University Southwestern Louisian and Mail, in co-operation with the IEE Computer with Send abstracts and paters in It. Send abstracts and paters in It. Thomas Coulsins, Computer Sciences Department, James Southwestern Louisians, 184



The Foreign Office is not being completely frank about machine readable identity documents, says Martyn Harris

## Big Brother is going to be watching you via your passport

keep track of the movements of

certain categories of quite innocent

tion would, moreover, be available

to other government departments such as the Home Office, Customs

and Excise and the Inland

This is not the purpose of the

owners to the police on matters

that bad nothing to do with car ownership. Yet this is now one of

the routine functions of the

The only place UK citizens will

> be able to use MRPs for some

years will be the

Although governments justify passports on the grounds that they assist their own nationals to cross

frontiers, to seek consular as-sistance and to identify themselves

to banks and foreign authorities,

there are some, MPs among them, who question the need for pass-ports at all. Before 1914 they were

not obligatory except for entering about half a dozen countries, and

made passports compulsory for any British national travelling

otitside the UK, and the system

Unlike the original passport, which was a prized personal refer-

ence, signed by the sovereign him-

self, the document became an in-

strument of social monitoring and

satisfaction of the immigration

is currently trying out a suspect list

was retained after the war.

From January 1985, instead of just fixing his steely gaze on your swesty brow, the immigration officer could be poking your passport into an OCR scanner that will beek your designation of the poking your passport into an OCR scanner that will be the poking your designation. check your details and (possibly) tick you off against a list of unde-

Machine Readable Passports (MRPs for short) have been firmly accepted in principle by govern-ment and Foreign Office. A joint departmental committee is cur-rently examining new designs for the passport (which will also cooform to an EEC standard), and, according to a Foreign Office statement, prototype machines are already being teated at various UK ports of entry

ports of entry. Nevertheless, the new docu-Nevertheless, the new docu-ments will not have an easy pass-age to public acceptance. No less a body than the House of Com-mons Foreign Affairs Committee bas vigorously attacked the MRP on several counts, not least of which is the cost to the public

Civil rights groups like the National Council for Civil Liberties and the Joint Council for the Welfare of Immigrants, which bave attacked abuses of the passport system in the past, also view the introduction of MRPs with

The final shape of the new pass-port has not yet been finally agreed but the Machine Resdable Passport Development Committee office, Home Office, Her Majesty's Stationery Office and Department of Industry has come up with

It will be a 32-psge book in a burgundy red cover with "United Kingdom of Great Britain and Northern Ireland" on the front and the familiar rubric "Her Britannic Msjesty's Principal Secretary of Secre tary of State requests and requires

inside.
It will also have the stamp of the European Community on the cover, and more unfamiliar still, a plastic laminated page with your personal details printed on the outer margin in machine-readable OCR fount B. (For anyone who hasn't seen OCR fount B, it is as legible ss any ordinary typeface, so the passport will be human-reada-

Whal is more, it will not contain any information that is not already on the passport. This is an important point for groups like the Joint Council for the Welfare of Immi-grants, which has complained in

the past about various secret codes used on traditional passports.

These include innocent-looking techniques like underlining and capitalisation which have been used to see the contract of officera check any passports they are dubious about against a manual "suspect list". Heathrow Airport used to warn immigration officers that the passport holder, while a British citizen, does not have the right of residence in the UK.

to allow all passports to be checked against such a list. Indeed, since the Foreign Office does not intend It was the growth of mass travel and the congestion at ports of en-try which first led to the proposal for MRPs from the International to check passports against a central database of all valid passports is-sued, this will be the only function of the MRP, spart from the purely mechanical one of making sure all civil Avanon organisation, which hoped to speed the immigration process for airline passengers.

Which seems resonable enough the details are actually present on

on the face of it, so why all the fuss from MPs and civil rights people?

The problem with the MRP from the point of view of personal liberty, is that it provides sope not only for checking identifica-

IF your passport photo makes you look like an urban guerilla, and you get the panics every time you go through immigration, it will probably be even worse before tit.

In its report on MRPs the Com-mons Foreign Affairs Committee finally concluded: "We are not For example, in a time of war or political crisis, it might seem expedient to restrict travel by, say, citizens of foreign extraction, political sirable innovation or that public money should be spent on its activists, or even members of legitimate opposition groups.
Furthermore, although present
plans do not envisage this, there is
a possibility of a large, integrated
computer database which could

"In the light of current public concern about privacy and data protection we believe that action

Rather surprisingly, the National Council for Civil Liber-ues takes a less hostile position. citizens over a number of years, or even of all citizens. This informasays: "We are not against MRPs as such. Our concern is that they should not contain information that people cannot read and that use should be overseen by the MRP at the moment, any more than it was the purpose of the DVLC computers in Swansea to provide information about car

But, as Hewitt observes, th government proposals for such a registrar are extremely vague and will need considerable beefing up

will need considerable beefing up before anyone is happy about the monitoring of the MRP project.

In a printed reply to the report of the MPs the Poreign Office flatiy rejected the criticisms, repeating its arguments that MRPs would speed up immigration control, that other countries were introducing MRPs, and that British travellers would be "left behind". Finally, the clincher, that British industry would lose export opportunities for the new equipment if plans were delayed.

Taking the arguments one by

equipment if plans were delayed.

Taking the arguments one by one: firstly, if all passports are religiously inspected it will certainly take longer than the present system where most people are simply waved through.

As Frank Hooley, MP, points out: "My experience is that British people are simply passed. Are you

people are simply passed. Are you really going to save much time by this machine-readable exercise when most other people will actually not have an MRP?" anyone popping over to Boulogne for the day would have been outraged by the idea.

During the First World War, Defence Of The Realm regulations made.

Hooley is right about most people not having MRPs, which raises the FO's second argument that "other countries are working towards MRPs". In fact the only major country even experimential with the ides is the US, which he a pilot system called TDIS

Canada has computer produc-tion of passports, but they are not machine readable. In Japan, Italy, France, Germany and most other control. Even today there is no basis in Statute or case law for major industrial countries the propassports, and technically you can enter or leave the country without one, provided you can establish vour Belitich citizenship to the

satisfaction of the immigration The BBC proposal for a com-officer. mon format passport does not de-At the moment, immigration mand that it should be machine officers check any passports they readable. Far from being "left behind" when they go abroad, the only place UK citizens will be able to use MRPs for some years will be

principle is the same.

The function of the MRP will be to allow all passports to be checked against such a list. Indeed, since the Poreign Office does not intend trial by the Department of Industrial try at various ports. In fact, the DoI denies that any such machine

It seems that in its eagerness t promote the MRP, the Foreign Office is not being completely the passport.

MPs like Frank Hooley, George frank about it. Even if the equippolities and Anthony Grant are ment did exist, there are still no unhappy about the possibility of countries apart from the US with extending the suspect list. They advanced plans for the MRP and have also wentleted aloud about the US is not notorious for its extension of this gerness to buy British computers.





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Job Title

Company

## MD for Cable and Wireless Services

Weeks managing director. He was previously parent board director with the Berec Group, responsible for Continental Europe and inter-national marketing. Before that he

was managing director of nance divisions of the company.

■ CTL is continuing its expansion into the Convergent Technologies promoted to regional sales manpromoted to regional sales man-ager at Cifer Systems' Nottingham workstation market with the appointment of two senior sales executives for the London and She has been with the company for Midlands region. Derek Carter (Midlands) was previously sales director for Aeı (Microsystems) in Iwo years as a sales executive. Birntingham, and Jamee Bowle (London), who will be responsible for all government departments accounts including the Ministry of Defence, was formerly with Century Data Systems in California.

Former Extel Computing director Dennis Samuel has joined Consultanta (Computer and Financial) to take responsibility for the project management of CCF'a stockbroking system Fiscal, and its investment management system ts investment management system



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second time, and Compec Scotland

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Compec in London, it follows Compec



Three new sales appointments have been made at Cambridge Interactive Systems. Dave Cornfield joins from Prime as Southern re-gion manager; Hugh Fingland, formerly of the CAD Centre, has been appointed operations man-ager; and John Jeffries, also from Prime, becomes customer servicea and hardware support manager.

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Weather forecasting - cares and future computer allocation; IDPM West London to Order hranch. Bull Hotel, Gerard Cross. 7.30.

Seminar implications of the art Cobol standard, BCS Cheltenhas and Gloucester hranch Carton Hotel, Cheltenham, 2,30. Local area networks. BCS Cor-

don branch. Maple Roson, Fairfield Halls, Croydon. 7.15. The computer in court. BCS Harlow hranch. The Noriolt

Harlow, Auditing of computers, BO Next branch, Department of the puting, University of Kent. 7.3.

Room, Saxon Inn, Southern Wafi

FEBRUARY 9

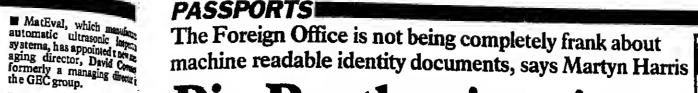
Mercury - the alternative to British Telecom, Bes Kanana Branch, Kingston Polyteche, Kingston-upon-Thames, Sure Intelligent query language in databases. BGS Belfast brush. Ulster Polytechnic. 2.30.

Teaching computers, ECS North London branch. West Lodge Park Hotel, Cockboster, 8,00.

#### CONFERENCES

AN exhibition of computer-based instruments, called Control 83, will be held at the Loudon Kensington Exhibition Centre from February 15-17, and at the Crest Hotel in Runcorn from Feb-ruary 22-24. It will feature some of the most advanced equipment, in the most advanced equipment in the field of industrial and process the field of industrial and process control, say organisers Francis Tomlinaton & Associates. Exhibitors include Ferranti, GEC, Burr-Brown LL, International and Westinghouse. The exhibition has been organised in conjunction with Project Presentations and compilmentary tickets are available from Francis, Tomlinson, 38 Ashburn Place, London SW7 4JR, Tel: 01-373 3589.

Papers are required from research ers and practitioners in the medical information processing field of for example, alternative programming languages in medical computing; computers and handputing; computers and hands capped people; medical dambase and database management; and innovative applications. Abstract of about 200 words should be such as a bound by the such as a bound by the such as a bound by the spaced manuscripts, 19-3 pages long and aubmitted in inplicate by Tule 2. The conference of the space of cate by July 8. The conference sponsored by the Universities of Southwestern Louisians and Hewall, in co-operation with ACM, and the IRR Computer Society. SESSIONS on medical in Thomas Cousins, Computation processing will be in Science Department, University of Cluded in the 17th annual Hawaii Southwestern Louisiana, P.O. Sellar Sciences, its be held that can 70504. US



Terry Tehult has been spected customer services manager. Delta Data Systems. He found is company after eight year relationship where he was Lade. West branch engineering manager.

Besuchamp Computer Syenhas appointed 22-year-old just Wickes (below) as a director. It will have overall responsibility marketing the company's person and small business systems. It was previously in sales with a special husiness division of her Xerox.



sccepted in principle by govern-ment and Foreign Office. A joint ment and Foreign Office. A joint departmental committee is currently examining new designs for the passport (which will also conform to an EEC standard), and, according to a Foreign Office statement, prototype machines are already being tested at various UK ports of entry.

ments will not have an easy passage to public acceptance. No less a body than the House of Commons Foreign Affairs Committee bas vigorously attacked the MRP on several counts, not least of which is the cost to the public

probably be even worse before

just fixing his steely gaze on your

sweaty brow, the immigration officer could be poking your pass-port into an OCR scanner that will

check your details and (possibly)

tick you off against a list of unde-

Machine Readable Passports

Civil rights groups like the National Council for Civil Liberties and the Joint Council for the Welfare of Immigrants, which have attacked abuses of the passport system in the past, also view the introduction of MRPs with

The final shape of the new pass port has not yet been finally agreed but the Machine Readable Passport Development Committee (pure Yes Minister, thia), which was set up in 1981 by the Foreign Office, Home Office, Her Majes-ty'a Stationery Office and Department of Industry has come up with

outline specification.

It will be a 32-page book in a burgundy red cover with "United Kingdom of Great Britain and Northern Ireland" on the front and the familiar rubric "Her Britain & Majesty's Principal Secretary of State requests and requires "Inside

Rusopean Community on the counside the UK, and the cover, and more unfamiliar still, a was retained after the war. plastic laminated page with your personal details printed on the outer margin in machine-readable OCR fount B, (For anyone who isan't seen OCR fount B, it is as legible as any ordinary transfers. legible as any ordinary typeface, so the passport will be human-reada-

What is more, it will not contain any information that is not already on the passport. This is an important point for groups like the Joint Council for the Welfare of Immi-grants, which has complained in the past about various secret codes

used on traditional passports.

These include innocent-looking techniques like underlining and capitalisation which have been used to warn immigration officers that the passport holder, while a British citizen, does not have the right of residence in the UK.

It was the passion of more travel.

It was the strait of mass travel and the congestion at ports of entry which first led to the proposal
for MRPs from the International
Civil Aviation organisation, which
hoped to apped the immigration
process for airline passengers.
Which seems reasonable enough
on the face of it so which the first

on the face of it, so why all the fuss from MPs and civil rights people?
The problem with the MRP, from the point of view of personal liberty, is that it provides scope not only for checking kienting.

IF your passport photo makes you look like an urban guerilla, and you get the panics every time you go through immigration, it will sometimes to extend the scope of these categories if circumstances demanded system to keep track of all citizens, and about the availability of the government departments.

Big Brother is going

to be watching you -

via your passport

For example, in a time of war or political crisis, it might seem expedient to restrict travel by, say, ciuzens of foreign extraction, political activista, or even members of legi-

rimate opposition groups.
Furthermore, although present plans do not envisage this, there is a possibility of a large, integrated computer database which could (MRPs for short) have been firmly certain categories of quite innocent citizens over a number of years, or even of all citizena. This information would, moreover, be available to other government departments such as the Home Office, Customs and Excise and the Inland

This is not the purpose of the MRP at the moment, any more than it was the purpose of the DVLC computers in Swanses to provide information about car owners to the police on matters that had nothing to do with car ownership. Yet this is now one of the routine functions of the DVLC.

> The only place UK citizens will be able to use MRPs for some years will be the

Although governments justify passports on the grounds that they assist their own nationals to cross frontiers, to seek consular as-sistance and to identify themselves to banks and foreign authorities, there are some, MPs among them, who question the need for pass-ports at all. Before 1914 they were not ohligatory except for entering about half a dozen countries, and anyone popping over to Boulogne for the day would have been

outraged by the idea.

During the linet world War,

Defence Of The Realm regulations It will also have the stamp of the any British national travelling aropean Community on the outside the UK, and the system

> control. Even today there is no basis in Statute or case law for passports, and technically you can enter or leave the country without one, provided you can establish your British citizenship to the

At the moment, immigration officers check any passports they are dubious about against a manual "suspect list". Heathrow Airport is currently trying out a suspect list held on a microcomputer, but the

held on a microcomputer, but the principle is the same.

The function of the MRP will be to allow all passports to be checked as first such a list. Indeed, since the forcing Office does not intend to check passports against a central database of all valid passports is sued, this will be the only function of the MRP, spart from the purely mechanical one of making sure all the details are actually present on promote the MRP, the Foreign the details are actually present on

MPs like Frank Hooley, George MPs like Frank Hooley, George
Foulkes and Anthony Grant are
unhappy about the possibility of
extending the suspect list. They
have also wendered aloud about the US is not notorious for its at
the possible partection.

and about the availability of the

In its report on MRPs the Commons Foreign Affairs Committee finally concluded: "We are not convinced that the MRP is a desirable innuvation or that public money should be spent on its

"In the light of current public concern about privacy and data protection we believe that action

Rather aurprisingly, the National Council for Civil Liberties takes a less hostile position General secretary Patricia Hewitt says: "We are not against MRPs as such. Our concern is that they should not contain information that people cannot read and that their use should be overseen by the Data Protection Registrar."

But, as Hewitt observes, the government proposals for such a registrar are extremely vague and will need considerable beefing up before anyone is happy about the monitoring of the MRP project.

In a printed reply to the report of the MPs the Foreign Office

flatly rejected the criticisms, re-peating its arguments that MRPs would speed up immigration would speed up immigration control, that other countries were introducing MRPs, and that British travellers would be "left behind". Finally, the clincher, that British industry would lose export opportunities for the new equipment if plans were delayed.

Taking the arguments one by

Taking the arguments one hy one: firstly, if all passports are religiously inspected it will certainly take longer than the present system where most people are sim

ply waved through,
As Frank Hooley, MP, points
out: "My experience is that British people are simply passed. Are you really going to save much time hy this machine-readable exercise when most other people will actu-ally not have an MRP?"

Hooley is right about most people not having MRPs, which

raises the PO's second argumen that "other countries are working towards MRPs". In fact the only with the idea is the US, which ha pilot system called TDIS Washington.

Washington.
Canada has computer production of passports, but they are not machine readable. In Japan, Italy, France, Germany and most other major industrial countries the production and inspection of passports is not only non-comp

The BEC proposal for a common format passport does not demand that it should be machine readable. Far from being "left behind" when they go abroad, the only place UK citizens will be able to use MRPs for some years will b

promote the MRP, the Foreign Office is not being completel frank about it. Even if the equip

Position in Company



NOW in Birmingham - the centre of industrial Britain.. Midland Bingley Hall, Birmingham. April 28-30, 1983 Sponsored by Practical and COMPUTER This exhibition is the ideal showcase for companies. who need to demonstrate their products to the fast expanding market for home and personal. 450 computers, small business systems and associated software. When you consider that the markets for personal computers are regional and that Birmingham has a developing computer awareness with a great deal of computer expertise in the area. you'll appreciate the need for The Midland Computer Fair. The public has already demonstrated its appreciation of The Computer Fair in London by sheer volume of numbers. We know the success will continue in Birmingham. Personal computers are part of everyday life. Make Sure Your Computer Products And Services Are Seen At The Midland Computer Fair. For the full story contact the Exhibitions Manager. The Midland Computer Fair, IPC Exhibitions Ltd. Surrey House, 1 Throwley Way, Sutton, surrey SM1 4CIO.

Please contact me with further information.
The Midland Computer Fair. Midland Uso 1 dis !

sized

printer

In-between

concept from Russet Instruments had its UK launch at Compec '82.

riction or single sheet stationery up to 13 toches wide, so it can print 132 columns at 12 epi. It thus fills the slot between wide body

machines and the 80-column, 10i

It is also said by Russet to be th

only printer in its class to offer i

automatic paper cutter. This is a the form of a roller, which can be

cut single or multi-part stationery

The minimum paper height which can be cut is approximately one inch, rendering the printer suitable fur docker and ticker

printing applications.
Offered as standard is a wandering keypad for manual forms control, self-test and paper

over the entire carriage width

The Mini 136 handles tractor

## Shugart launches 3.5in Microfloppy disc drive

SHUGART Associates has intro-duced its new generation of rotat-dent venture unit within Sbugart nouncement of a 3.5 inch program Microfloppy disc drive. It is available in this country through CPU

Peripherala,
Occupying about a quarter the volume of a standard Minifloppy, the single-sided SA300 is well suited for desk-top and portable computer applications where high capacity in a small low-cost package is required.

inch cartridge media format proposed by the Microfloppy Standards Committee, formed in May 1982 by 19 leading disc drive and medis manufacturers, the SA300 provides 500 Kbytes of unformatted capacity, 135 tracks-perinch (TPI) density and six-millisecond track-to-track access time.

cond track-to-track access time.
"Demand for the Microfloppy should match the accelerating growth of desk-top and portable computer systems markets,"

ing storage devices with the an-

programme.

"The SA300 offers the same performance and capacity as a Minifloppy, but provides the additional benefits of much smaller size, lighter weight and greater ap-plication flexibility through lower power consumption," Narshara said.

Since Microfloppy drives will address many new product appli-Designed to operate with the 3.5 cations, including consumer-

a jacket tocket.

The SA300 was designed to operate with a diskette protected by a hard plastic shell. Also, the shutter covering the data access window is a apring-loaded design which remains closed until the media is loserted into the drive.

When the media is withdrawn

When the media is withdrawn,

If you have purchasing responsibility in the Computer Peripherals fields

February 2-4, 1983 10.00-17.30 (closing 16.00 on the last day)

cunard International Hotel,

Hammersmith, London.

Admission by business registration, is free of charge.

Plan your visit now

Visitors to the exhibition will also be given the opportunity to attend seminars organised by the peripherals suppliers Association.

Details of these should be obtained in advance from:

Nrs. Helen Cibbons, Peripherals Suppliers Association,

you can't afford to miss the ...

protects the media from such po-teotial contaminants ss dust, dirt and fingerprints.

Shugart endorses the 3.5 inch size because it is large enough to hald one Mbyte of capacity without overtaxing existing technologies. Also, with 80 tracks per surface and a 300 rpm rotating speed, the SA300 schieves the same transfer rate as a Minifloppy — 125 or 250 Kbytes/secood in single- or double-density respectively.

With an identical transfer rate, the SA300 search interested into

the SA300 can be integrated into existing systems without affecting the substantial investments in soft-ware and cootrollers. Sbugart plans to announce a follow-on product later this year.

The SA300 measures 1.60 nches high, four Inches wide and six inches deep.

CPU Peripherals (CW), Rodd Industrial Estate, Govett Ave-nue, Shepperton, Middx TW17 8AQ. Tel: (09322) 46433.

equipment you need to see will be featured

is larger than ever before. This is the idea

opportunity for those

requiring computer peripherals to discuss their needs with specialist suppliers.



## Filter helps solve glaring problem

POWER Equipment has intro-duced a new type of anti-giare filter which is claimed to eliminate reflections on VDU screens to create a sharper, clearer image. It costs £35 + VAT. Msoy recent surveys have shown that VDU operators fre-

quently suffer from eyestrain.

There is oo way of completely eliminating this problem, but as the cootrast hetween the data. There is oo way of completely eliminating this problem, hut ao
anti-glare filter fitted over the
screen will prevent annoying reflections from lights and windows.

Using a Powquip filter, text is
easier to read because most of the

#### Seed DBMS for Gould 32-bit minicomputers

GOULD SEL has announced svailability in the UK of the Seed database management system for stored information. This six

database management system for its range of 32-hit minicomputers.
With this launch Gould SEL claims it oow offers the UK user the three most widely used datohase management aystems: the Seed database system developed hy Ioteroational Data Base Systems which offers exceptional power, ease of use and full interaction; the Rapport relational data-base system developed by Logica, which offers full interactive operatioo combined with case of use; and the Total database system developed by Cincom Systema, which is widely used throughout the world and enables the user to incorporate his database directly into his own Fortran routines.

Seed is a Codasyl-compliant net-

work datahase management

different users to view the modera in different ways, depole on their applications. It also as schemes have been embles and users can retrieve information

It also increases program productivity hy removing it is to define and manipulate first each application. Seed user is tional-like query language will exceeds Codasyl specification. Seed has been successful used in a wide range of buint

government, academic and per tific applications.

Gould SEL Computer System (CW), Raffery House, 24 Seas Court Road, Sutton, Surrey St 4SY. Tel: 01-643 8020.

#### Data comms tester can find faults on terminal

A NEW data communications test set, the Electrodata CTS-2, will find faults on computer terminals, peripherals, data communications links or any part of a computer system. Available from David Bisset, the CTS-2 is aimed at computer users and at suppliers of computer systems or peripherals. It is especially suitable for first line servicing, says the company.

The CTS-2 is compatible in the control and half duplet synthetic control and asynchronis control and asynchronis control and asynchronis control and asynchronis control.

vicing, says the company.

The tester is claimed to be the world's first hand-heid batteryoperated data communications test set with full data storage capabilities. Data can be captured theo analysed later since the CTS-2 has send and receive buffers which each hold up to 1023 characters. Weighing less than three pounds (1.3kg), the tester replaces bulky

David Bisset (CW), 52 Line, Redbourn, Heris (1.3kg), the tester replaces bulky

7FY. Teli (858285) 2637.

The CTS-2 is compatible to both full and half duplex syndrous, HDLC (high level data is control) and synchrone systems. Data can be displayed Ascii, EBCDIC or hex code at the LED alphanumeric displayed.

The tester will reduce into downtime by diagnosing fruit computers, CPUe, terminal, inters, modems and mulciplement.

#### Low-cost IBM compatibility

TWO terminals which replace IBM-3270s at half the cost are available from General Audio and Data Communications, part of the UK communications group, CAB, The ICOT 700 and 701 match the keyboard and features of the IBM products. They also allow two applications to run at the same time. All screen sizes supported by which can serve 12 units the best features eliminals in all cations (CW), pri six nals for separate restricts.

# Intelligent graphics take strain off system

THE latest colour graphics system from Megstek, the 7600, is said by distributor Terminal Diaptay Systems to bring a dramatic in-

crease in local intelligence.
"The 7600 employs multiple high performance processors for complete graphics versatility," said TDS managing director Bob Astley. "Its increased power and inselligence reduces the drain on the host computer, because these dedicated processors perform all the calculations for complex trans-

Local intelligence also manages display lists, event queues and in-teraction, which further frees the

DEC distributor Computer Applications Ltd (CAL).

Developed by CAL's software

development tesm, the new system, called Billboard, is said to

system, cancer Billboard, is said to speed up the production of classified savertisements as it removes production errors and automatically invoices the savertiser.

The operator sits in froot of a

terminal and takes iocoming calls

over a headset. The screeo

prompts the operator with various

A dual user capability option is available to offer advanced workstation features, he edded. The processors include a user-

programmsble 16-bit microprocessor in a local intelligent front-end module, graphics processors, 3D surface processor, 3D transformation processor and clip proces-Totally interactive real time rotation of 3D objects in 16 of 4,096 colours is another innervation. Lays TDS. Three-dimensional surfaces of up to 600 sides can be filled

TELEPHONE solvertisement selection of classifications, the massagement system based on the styles available within each classisubscriber; alterations can be read to the styles available within each classis.

fication, column centimetres avail-

sble, and so on.
The operator keys in the subs-

criber's response to these prompts and the software configures the advertisement on the screen in

accordance with these responses.

Running totals of cost and column

centime tres are also displayed.

The copy is typed in by the operator via the keyboard. Again, the cost is displayed as the length of the text increases. Preparing the

text in this way allows the operator

instantly; 2D and 3D transfor-

according to the company.

Either a 512 or 1,024 resolution can be selected in a raster system, or a 4,096 in vector. With a write speed of better than 160

naooseconds/pixel, and high-speed parallel communications or scrial for greater distances, the 7600 offers total dynamic real time graphics on a completely flicker-free scan, says TDS. Application areas cover

neering, simulation, CAD, mili-

Terminal Display Systems Ltd (CW), Philipe Road, Whitehirk lodustrial Estate, Blackburn BB1 mstions are easy, so that the user can consider his product from every angle and point of view, 15TH, Laces. Tel: (0254) 676921. PDP-based device speeds tele-ads

Ooce the subscriber has

accepted the ad, a hard copy is produced for typesetting. Billboard has a multi-edition ea-

are highlighted by the system.

printer-plotters in media widths from 11 to 72 inches for IBM 360/370, 4300 and 30xx mainframes and compatible computers.

The 780-11 accepts unordered graphic data in the new Versatec. Random Format and ordered vectors. The 780-13 accepts Versates.

tors. The 780-13 accepts Versatec compressed raster, blocked raster and EBCDIC print formats.

Through modular addition the controllers can support one or two Versatec printer-plotters.

#### DEC's office furniture includes a split-top, odjustoble toble. Furniture is designed to complement VT100

MODULAR office furniture de- justable elements in reduce neck signed for use with VT100-family video terminals and complementary hardcopy terminal stands have been introduced by Digital Equipment Co of the UK.

The furniture includes a splitter and introduced by Digital Equipment Co.

can be placed in different papers published by a newspaper or mag-azine group — and long-running advertisements coming to an end top, adjustable table, fixed-height work tables, a mobile diakette file and a free standing enpy-holder. It has been designed for ease of use

Computer Applications Ltd (CW), 14 Ashfield Road, Chorley, Lanes PR7 ILH. Designed hy ergnnnmle

printer-controller subsystems: They connect to IBM channels via a standard IBM 360/370 bus and

tag cables.
The 780-I1 controller offloads

data ordering from the host computer. It processes files for most plots in less than six seconds and accepts data in the new Versatec Random Format.

Instead of using traditional vec-

and back strain.

take acoustic covers. Digital Equipment Co Ltd CW), Digital Park, PO Box 110,

Stands designed for DEC's LQP02 letter-quality prloter, Letterprioter 100, Letterwriter 100 and Correspondent printers and terminals complement the mod-ular furniture. Stands for the LQP02 and Letterprinter 100 can

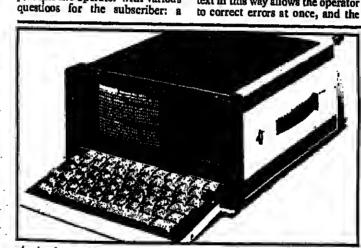
Plot controller takes data in 'random format'

mairix draft quality fount or 50 chps in an 18x18 matrix near lette

quality matrix. In both instance printing is bl-directional and logic seeking. The paper feed rate is 36 lioes per second.

A parallel interface with haod shake and error lines is standard, as is forms control and plotting

capability. Options includ \$232/423 nr IEEE interfaces. Russet Instruments Ltd (CW) Unit 1, Nimrod Way, Nimrod Iodustrial Estate, Reading RG2 0BB, Berks. Tel: 0734 868147.



#### Aughton's portable Micropro/15 industrial termina

#### Rugged terminals can be used as standalones

FOR storing long documents and large records such as mailing lists, Compucorp has introduced a 15-Mbyte hard disc.

Processing of large volumes of text or data are made easier, says Computorp, with the autopilot feature, which stores keystrokes

With a capacity of about 7,500
A4 pages of text, it is intended
primarily as a file processor on net-

Up to three of these Winchester

A RANGE of four rugged, compact industrial terminals for use in narsh environments has been introduced, and enables the terminals to be used in standalone applications such as monitoring and

Microsystems.

The Micropro range is easy to service, says Aughtoo, and has been designed for both OEMs and end users for interfacing to remote computers or equipment.

All the terminals have an integral, fold-down keyboard and are available in customised versions.

The terminals incorporate an advanced microprocessor which allows features not normally avail-

Hard disc helps with boring jobs

for any routine an operator wants.
Once stored, a routine can be

carried out at any time oo a single command. Repetitive keystrokes and procedures are thus eliminated in otherwise time-consuming and

## Versatec printer-plotters. All models operate on IBM block multiplexer, byte horse elements locked move and Half-height 5½ inch

VERSATEC has launched two on-line plotting controllers which support Versatec electrostatic printer-plotters in media widths

multiplexer or selector chancel un-der standard IBM operating systems and spoolers, and all models emulate IBM 3211/3811

systems, and intelligent terminals, yet occupy the cabinet space of one standard-sized drive. Our new

drives 'equal full size'

TANDON bas anounced a family of half-height 51/4 in floppy disc drives that equal, it says, the capacity and performance of full-sized 51/4 in drives.

Jugi Tandon, chairman and president, says: "Two of our new TM55 Thinline drives can double the memory capacity of word processors, small husicess systems, and intelligent terminals.

Tandon Corp (CW), 20320 Prairie Street, Chataworth, CA 91311, US. Tel: (213) 993-6644.

#### Printer has a vocahulary of 490,000 words and 300,000 technical terms. As in practice nobody is likely to need all of them, there is plenty of storage space for other languages. Recommended retail price of the Compucorp 686 is £9,500. Recently it was announced that for the second consecutive year the Compucorp Omesa word processions. variety of applications

THE DPS200B, a mine-wire dot matrix printer featuring a maximum print speed of 200 characters per second with high resolution, is evailable from Fujitsu. The printer is suitable for a broad spectrum of applications as a terminal or hard-copy unit, says the company.

A wide variety of print capabilities is possible with the DPS200B. They include label prioting, and graphic output. Up to 64 custom designed characters can be added to the standard.

Fujitsu Burope Ltd (CW), 54 Jermyn Street, London SW1.

The Oct 1900 forms feeder makes 45 copies a minute.

Output copied to fancy paper copies a month, the 1900 series reproduces 45 copies a month, the 1900 series reproduces 45 copies a minute and has a capacity of 1,100 sheets.

The Oct 1900 CPF system is integrated into the Oct 1900 copying system to allow reproduction of a variety of originals on to a wide range of materials, says Oct.

Wide range of paper speciality materials, in addition to the computer forms copying system.

Designed for 8,000 to 80,000 1851. discs can be incorporated in one system to give 45 Mbytes online capacity. It can be used as the basis of a local area network, to run several terminals, or as an extra large capacity standalone word and data processors.

In this configuration, as well as having last access to as much as also has 320 pages of text, an operator also has 320 pages available on finding in the second consecutive year the computory Omega word processing system has won first place among standalone equipment in the annual user survey conducted by Datspro Research Corporation. This is the first time that any system has retained the number one position for two years.

The second consecutive year the Compucory Omega word processing standalone equipment in the annual user survey conducted by Datspro Research Corporation. This is the first time that any system has retained the number one position for two years.

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Compucory (CW), Cunning the survey conducted by Datspro Research Corporation.

Compucory Omega word processing strandalone equipment in the annual user survey conducted by Datspro Research Corporation.

The survey condu

graphic entities in a single element reduces the amount of data to be processed and the associated quirements for memory and data output. No changes in application programs are required.

The 780-13 controller, which does not accept Random Format, is priced at 40% less than the 780-

11, and can be easily field up-graded, says Versatec. The 780-13 can accept and process dats in Ver-satec compressed raster, blocked raster and BBCDIC print formats.

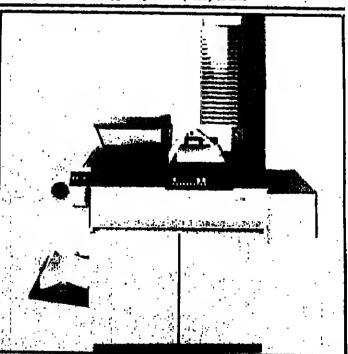
areas, and pen and fill commands. ter by as much as 20:1. Dats order Representing such complex ing, resterisation and data Two electrostatic plotting soft ware packages are available. Versa pint Random enables users to de

pint Random enables users to define pens, fill areas, and process Ascii strings. Other data formats are supported by Versaplot 7.7 software integrated for 1BM OS, OS/VS and VM/CMS.

The 780-11 is priced at £13,344, and the 780-12 spiced at £13,344,

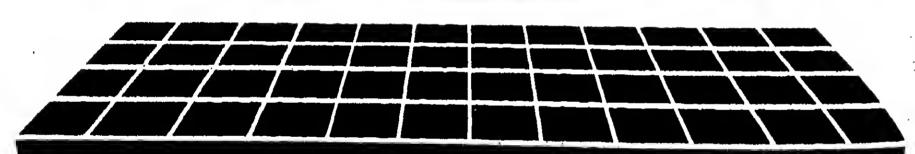
and the 780-13 at £7,358 Versatec Ltd (CW), 27-35 Lon-

don Road, Newbury, Berks. Tel (0635) 42421.



# Owies Hall, Buntingford, Herts. SG9 9LP. Tel: 0763 71209

For further details please contact The Exhibition Manager, Peripherals 85 IRC Exhibitions Ltd. SUITEV House, 1 Throwley way, Sutton, Surrey SM 400 Tel 01-848-8040.



## Wembley Conference Centre April 26-28 1983 ...

... will be the most important trade show of the year – it will bring computer manufacturers and suppliers into direct contact with systems and software houses, computer OEMs, dealers, distributors and computer retailers. And no-one is better able to launch the definitive computer trade show than IPC. We know the computer market, publishing journals like Computer Weekly, Systems International and Practical Computing. We organise the computer industry's leading exhibitions. COMPEC and its regional offshoots in Wales, the North and Scotland; COMPEC Europe; The Computer Fair; The Northern Computer Fair; The Midlands Computer Fair; the CAD Exhibition; CAD North, and several others.

What's more, we have the right venue. London and the South East dominate the UK market for sales of computer systems and peripherals, and the Wembley Exhibition and Conference Centre is right in the heart o the region. Get more information about The Computer Trade Show '83 by coupon today or telephone John Cole on 01-643 8040.

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# PERIPHERALS PREVIEW

## Shop window for the nuts and bolts suppliers

#### John Kavanagh sets the scene for next week's exhibition in Hammersmith

A WORKMANLIKE show where users and systems houses can visit nearly 50 manufacturers and and data storage products - that is the Peripherala 83 exhibition, which this year moves to London's Cunard International Hotel in Hammersmith on February 2, 3

The show is backed by the Peri-pherals Suppliers Association and Computer Weekly's slater publica-Systems International. It is

The show bolds few surprises in ments; its main benefit is that it enables visitors in see a lot ni suppliers of the basic nuts and bolts of computer systems in a

- ICL and Honeywell's Italian company - are among the exhibitors, showing peripherals for

Honeywell Information Systems Italia is showing for the first time in the UK its matrix printers. They range from units running at 100 characters a second for office microcomputers to a 14-needle printer with a speed of 400 charac-ters a second. Honeywell says this gives the first printer a throughput comparable to that of a line printer

running at 250 lines a minute.
ICL OEM Sales, formed nine nooths ago, has one of the three biggest stands at the show, a bold contrast to its low-key Compec de-but in November. ICL bnys large numbers of printers and displays for inclusion in its own systems

new OEM sales organisation sells a proportion of these products on to other OEMs, making a profit but disc drives. The latest products of the peripherals market, building printers, display terminals and disc drives. The latest products

sonal Computer and made by a relatively small company, Koku-sai, is claimed to offer more facilities than equivalent low-cost units.
These facilities include screen editing, full block and line graphics and the ability to select commu-nications features and character sets for 12 of the world's main languages by setting external

The nther product is the Ricoh printer family, including the RP1600 correspondence printer and a new low-speed and lower-cost version. Also new at the show is an RS232C standard interface for the printers, specified by ICL.

through switches.
ICL says this enables distributors and systems houses to leave installation to usors themselves if necessary. The company adds that all devices bought in go through quality and reliability tests similar to those faced by ICL's own pro-

the merger of two associated companies, Data Recording Equipment and Newbury Laboratories, and now claimed to be the UK's biggest peripherals manufacturer.

The company, owned by the National Enterprise Board, has

625 staff and a turnover approaching £30 million. It covers

still able to offer a good price.

Two Japanese products are nn show at Peripherals 83. The display terminal used in ICL's Personal Computer and made by a relatively small company, Kokusai, is claimed to offer more facilities.

These last two products, mark a new departure for the company, for they are bought in. Newbury Data points to the need to move quickly when a good op-portunity is spotted. "If you can develop the product gulckly, that's fine; otherwise you look for a good established product," says mar-keting manager John Pether. He adds that the IBM 3270 mar-

ket in particular is always strong because users are constantly re-placing terminals installed five or six years ago. The Newbury Data product undercuts IBM by 25%,

Of the handful of companie using Peripherals 83 as the launching pad for products, the distributor Pragma is showing the latest model in the heavy-duty printer range from the US manufacturer Data Printer. The new Opposite ICL and matching It io stand size Is Newbury Data Recording, formed last May from the merger of two associated control of the stand size Is Newbury Data Recording, formed last May from the merger of two associated control of the standard size Is Newbury Data go from £6,150 to £9,200 bandtrain unit runs at 1,500 lines a

Lower down the scale Pragma has the recently-introduced document printer from the French manufacturer IBR. This unit is auitable for letters, statements and passbooks, it takes paper of up to A4 size and automatically adjusts

itself to handle forms of

applications such as labelling

other printer suppliers on show include the distributor Sintrom Electronics with the fruits of an agreement signed with the US manufacturer Dataproducts last year: daisywheel, matrix and line printers running at up to 600 lines a minute. And Access Data Communications is showing Facit mermunications is showing Facit mermunications is showing Facit mat-munications is showing Facit mat-riz printers for the first time fol-lowing a £500,000 distribution agreement signed at Compec in Nuvember. Access also sells dai-sywheel and matrix printers from Qume and Newbury Data

These companies will be com-peting with manufacturers and distributors such as Anadex, Data Dynamics, Penny and Giles Computer Peripherals, Technology for Business — formed from a management buy-out of the French manufacturer Logabax's UK aubsidiary — and Telprinter Equipment, with a microcomputer materials of the side of th rix printer offering quality approaching that of a delsywhee but at under £500.

Another main product launch is in the storage media market, where the UK manufacturer ble data recorder said to be the only one of its kind to be com-pletely self-contained.

The device can run from its own

battery, from a 12-volt supply or from the mains. It measures 10 inches by six by 10.5 and weighs 101b. It uses standard 0.25-inch cartridge tapes and has standard recurding formats and interfaces. It costs £2,050.

It costs £2,050.

Blsewhere Winchester disc drives and cartridge tape units are the focal points, with very few companies featuring floppy discs.

Data Design Techniques aims to build on its growth in the Digital Equipment market last year with its Winchester disc systems complete with floppy drives for backup. The company's 31.2 Mbyte eight-inch system can be bought with installation services and n warranty from DEC itself.

A controller board, which can be supplied separately, can hundle a full Winchester and back-up system, including two 40-Mbyte drives, two floppy discs and a cartridge tape unit.

other suppliers include the US manufacturer Kennedy, with a new actuator which improves head itioning and cuts power de-Buro Ricctronics, which sells the Cynthia range from the French company Cli Honeywell Bull. The range includes 5.25-inch Winches-

Turn to page 24



Plashback to Peripherals 82.

## Seminars on graphics, terminals and storage

THREE of the main themes running through the Peripherals 83 cahibition—graphics, terminals and data storage—are the topics for seminars beld at the same time as the show.

The first day covers graphics, with papers on colour hard-copy devices, laser printing and plotting and the implications of the new generation of raster terminals, and processing at relatively low shops and libraries and inplications of the new sense ration of raster terminals, and processing at relatively low storage and libraries and on the sense time first electrostatic plotter was aunuched in 1969.

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Day two starts with papers on colour hard-copy since the first



PERIPHERALS 83 runs from February 2 to 4 at the Cunard Inter-Printippi Branch S 3 runs from February 2 in 4 at the Cunard linter-national Hatel, Hammersmith, London. It is open from 10am to 5.30pm na Wednesday and Thursday and from 10am to 4pm on Friday. The hotel is in Talgarth Road, near Hammersmith Tube Station. There is ample car parking space at the hotel and there are other car parks within walking distance.

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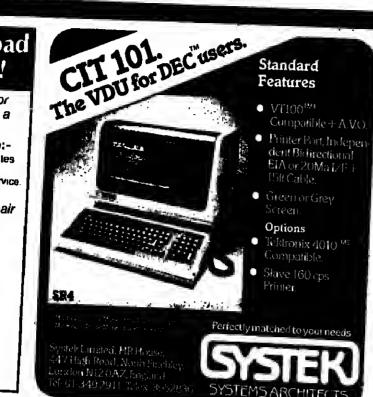
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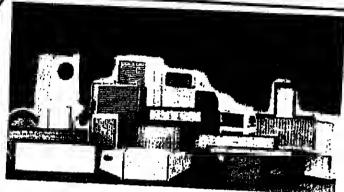


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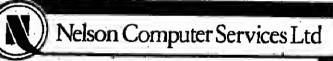
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## More choice for IBM users - if PCMs keep their word

Kevan Pearson reports on the state of play in the IBM disc market

disc. At least it was the year of the IBM disc. In August, IBM finally began to ship its 3380 2.5 gigabyte flagship disc system to Europe after a delay of over 12 mooths — a delay which cost IBM millions of delay which cost IBM millions of

Added to this, two companies contered the IBM disc business for

The first of the newcomers was Ibia Systems, a company formed specially with the intention of rocking the existing disc makers. It announced three products which were under development: a top system with twice the capacity of IBM's 3380; a device to take the 3380 head-on; and half capacity disc. All would use the same head-disc. disc assembly technology, and that technology would be very different from that adopted by IBM and the remainder of the plug-compatible

IBM's 3380, and the other offerings, use thin film heads, with conventional ferrite platter coatings. This took the opposite route: thin film coatings and normal fer-rite read/write heads. The com-pany claims several advantages for this set-up.



So far it has shipped Its first head/disc assembly to Cray Research, the Minneapoils-based supercomputer manufacturer, for testing. It expects to ship its first full products in the first half of this year. These will be the smaller 1.25 and 2.5 gigabyte discs, with the 5 gigabyte Ibis 5000 systems arriving in early 1984.

Amdahl was the second company to enter the field for the first time. It took a leaf out of the book

time. It took a leaf out of the book of its nearest plug-compatible rival National Advanced Systems. Increasingly in the 1980s, hardware manufacturers are coming under pressure from continually declining hardware costs. IBM and

And while both NAS and Amdahl are no exceptions.

And while both NAS and Amdahl have been successful in selling comparers to the Him base, the peripherals attached to these computers were coming from IBM, or from one of the other contenders in the IBM compatible peripherals. in the IBM compatible peripherals market. They were letting a heavy slice of business slip away. The consequence of this is that

both companies turned to their Japanese partners for high technology disc drives for sale primarily to their own bases. Amdahi, because of its close links with Fujitsu, went there for its 6000 disc system. And MAX which spile

system. And NAS, which sells Hitachi-built mainframes, went there for its 7360 drives.

Neither is competing head-on with 1BM with a direct 3380 "copy". Both drives are effectively half-sized 3380s, having capacities of about 1.25 gigabytes, but both manufacturers claim advantages of their products over IBM's, including, in the case of NAS, 3380 comparable performance, but without 1870 and 1870 a

parable performance, but without the need for reformar data:

Amdahl claims compatible performance from a box of substantially smaller physical dimensions. The company which made a major return to the IBM-compatible fold was Control Data, the third or fourth largest computer manufacturer in the world and the largest OBM supplier of discs in the world.

Of IBM's list.

STC's downs occurred not so much in its disc activities, but in two other developments. Firstly it dropped its VS Virtual Storage system which was designed to space on discs. The company claims that VS was dropped because of up and coming developments in laser disc; teahnology which will make disc storage so cheap that a low space.

The company has maintained s presence in the market with the 3350 compatible 33500 and double density 33502 products. But these are relatively old technologies, and outside the US CDC's sales operation in this field has been low key, and sometimes non-existent.

In 1982, however, the company gave notice of a major change in its IBM-compatible activities. Firstly it announced the 33800 series, and there are no prizes for guessing where it is aimed. Then it unveiled the 33750. Again no surprises in the product, except that it is hardware compatible with the

This could provide a major marketing advantage over CDC's rivals. CDC is the only IBM-compatible company to offer it.

Couple this with the company's search for a sultable method of distribution for these products and there could be troubled times ahead for the other contenders, as users are faced with a much wider choice of non-IBM IBM compatible discs.

And what of the established IBM compatible disc companies? BASF was the first company to reveal its plans back in 1981 when it announced a range of three products to compete with IBM's 3370, 3375 and 3380 drives. It obviously did not expect the problems IBN subsequently had with all three

BASF's products, like those of NAS, are made by Hitachi, as are the mainframes that the company sells, though peripherals sales re-main its most successful product

operation.

STC announced two products, the 8370 and the 8380, directly competitive with IBM's 3370 and 3380 models, and based on the same thin film read/write beads same thin film read/write beads—conventional ferrite platter technology employed by all the other products, including IBM's with the single exception of the as yet unproven Ibis designs.

Memorex also announced two products, like those of STC, directly competitive with IBM's products. The Memorex announcements are interesting in

nouncements are interesting in that the 3690 - the company 3370 product - heralded Memorex' entry into the small systems end of the market. This product is probably more impor-tant to Memorex than Its 3680. It is the company's first foray into the fastest growing segment of the IBM mainframe market — 14300a.

The 3680 follows the familiar

pattern of technology and price/-performance posturings of the other PCM disc makers. When it was announced, Memorex manag-ing director Mike Kitching des-cribed it as the most significant in his six years' tenure as head of the UK operation.

UK operation.

Before any competitive 3380 products are delivered (most are expected in the first half of 1983) IBM drew the battle lines for the

storage so cheap that a low space

STC's second bit of bad news was that the Documation laser printer it was developing and hoping to launch lest year was also
killed off, again because it had
been uvertaken by market developments. On the plus side, it
claims that its plans to build large IBM compatible mainframes are

going according to plan, and are on schedule for the 1984 deadline.

Two areas in the IBM peripherala market remain undecided, waiting for IBM to signal its moves. The first is in tape subsystems. A number of products subsystems. A number of products exist which can easily outperform venerable IBM 3420 tape

thing in this market soon since its existing products cannot match the performance characteristics de-manded by modern processors with data streaming channels.

Speculation has been mounting about IBM's as yet unannounced "Ocatillo" tape system, and it is expected soon, possibly in spring.

The other product which people are awaiting is the replacement for IBM's ageing 3705 communications controller.

There is just one thing missing from the IBM peripherals jigsaw now, and that is either a 3270 ternal protocol emulator for the Personal Computer. . 1982 marked a considerable in-

crease in the amount of choice users will have in the future, if all the promises made by the companies concerned come to pass. We have already seen the first fruits of the anticipated increase in competition at the top of the disc market; IBM's 3380 price cuts. Now the industry is waiting for the PCMs to keep their side of the



KITCHING . . . "Most important product in my six years at Memont".

#### Rise of the all-seeing machine

Machine Perception. Ramakant Nevatia, Preotice Hall, £22.40. THE FIRST time ever I saw computer it wasn't a computer at all: it was an optical character reader. OCR machines were the fastest means of ioputting general raw data in the 1960s, and still are. But the relative expense of OCR

technology, and a market distorted by capital investment in punch cards and keyboards has prevented the take off of what is now a quite mature technology. This, indi-rectly, is what Nevatia's book is

He describes the blossoming field of application, and some of the problems, of having machines which can see. He means the word in a very human seose, and the parameters of consideration are bounded by the notion that what we, as humans, see is the world.

lems by assuming implicitly that the ultimate outcome of visual Not unoaturally, perhaps, there is not a great deal of mileage in pursuing the technologically more sympathetic "compound eye" of the insect, since we don't know "what" the fire team or how is in "what" the fly sees, or how it in-

"It's special character set we developed in order to break into the ins Nevatia slides around those prob-

machine perception is a picture of information in "a blaze of ligh very much as we see it.
The book is heavily referenced, st the speed of sound". several relatively short chapters having up to 48 identified sources. Certainly Professor Nevatia has

achieved in the process is delivery

lightly on the thin ice of a ver

## In-depth look at Why we need the real world

Real Time Languages Design sod Development. S. J. Young. Published by Ellis Horwood. £29.50 (available through John

INTEREST IN Ada, the real time programming language developed by the US Department of Defence has been growing steadily over the past few years as the computer in-dustry awaits development of a full

compiler.

RTL/2, developed by John Barnes of SPL International, and Moduls, developed by the author of Pascal, Niklaus Wirth, are also attracting their share of the limelight as the number of online applications increases, so this book is certainly well-timed.

The author, Stephen Young of the University of Manchester lastitute of Science and Technology.

nology, analyses the structure and characteristics of all three languages in his book, as well as discussing design requirements of real time languages more generally.

In the first half of the book he defines essential features of a real defines essential features of a real time language, such as flexibility,

important, security, and applies these criteria to an io-depth examination of data and program

structuring.
Young believes that a real time language should be capable of programming its own compiler, be-cause of the secruing benefits if a whole project is developed in the same language, and argues that non-real time features such as dy-namic arrays should be included for that purpose.

Concurrency is examined in some detail, outlining problems and likely errors, comparing alternative rendezvous models pro-posed by Hoare and Brinch Hansen in 1978.

The concept and structure of this book has been extremely well thought-out, and is perfect for the student. It is easy to switch from reading about a conceptual language feature in the front section to a practical illustration of it in the back and vice versa, making ideas casier to grasp and visualise.

Maggie McLening

#### maths more than ever

Mathematics for Computing. G. P. McKeown and V. J. Rayward Smith. MacMillan. Hardback, £18.00. Paperback, £8.95.

FOR THE programmer or analysi in the field an in-depth knowledge of computer mathematics was untirecently more likely to be a hindrance than a help. But this state of affairs has been

changed by the growing use of packaged application programs coupled with an increasing involvement in systems, graphics and CAD/CAM areas by working analysts and programmers.

Some knowledge of mathemat

ics, therefore, is now an essential requirement for many workers in information technology.

This book is intended principally as an introduction to the subject for first year degree atti-dents in computer science. It is also intended as a reference work for analysis and programmers, despite a warning from the authors that a good "A" level in Matha is assumed. The book's clear layout and well-structured text makes it well worth the money.

Kevin Cahill

### The flowering of new architectures

Computer System Architecture. W. Morris Mano. Prentice Hall. mainframe functions through £22.40.
THE MICRO has given us more

than Space Invaders. It has led us to a point where the potential for alternstive architectures in computer design has never been greater. And with this flowering of small scale potential, has come a flowering and proliferation of in-terest in architecture, the basic "engine" which drives a computer

"engine" which drives a computer system.

To achieve widespread utilisation of this potential, bowever, requires that clear guides ro all the basic constituents of computer architecture, and their working elements, should be available. Professor Mano has presented a formidable book in this respect. Although the book is intended principally for students of hardware design and engineering, hardware design and engineering, probably around first year university level, the author quite fairly claims to affer a good working guide to engineers and job profes-sionals.

Mano covers the tone from

perceptions of the clear edges of structures.

It would be unfair to say that Professor Mano does this, but he adds to the task of understanding

historic architectures, Following this general inclination Professor Mano has produced a true stu-dents' workbook. I have just one small quibble about this otherwise excellent book. To satisfy himself that we understand what he is saying, Professor Mano has devised what he calls a symbolic register transfer he calls a symbolic register transfer anguage, but an accretion of dialects and accents tends to diminish understanding and dim our

microcoding to the working prin-ciples of microprocessors and peri-

In contrast to Ibbett in his book on high performance architecture, Mano is more definitively con-cerned with the "how of the now"

rather than the whys or whats o

pheral storage.

at the expense of maybe just trying a bit harder with existing conven-

## Guide to databases

Databases for networks and instance, Robb Wilmot of ICL minicomputers. Dimitris N. Chorafas. Publisher Van Nostrand Reinhold £21.25.

MY PROBLEM in reviewing this book is that for many years I was a dedicated opponent of databases, and highly suspicious of the technologists promoting them.

what Chorafas is setting out to describe in his book, and he does it very successfully, is a world in which every network will be awash with databases. But Chorafas' advocacy of endless databases everywhere is not in tune with the

would like to see.
But the general argument of the book does no justice to the clear intelligent presentation Chorafas makes "within the argument" as it

He has produced a most valueble early guide to an inevitable de-

everywhere is not in tune with the direction information technology must take if it is to become the decision support system which for the decision support system which decision support system which for the decision support system which support system sy

#### Hardware directory

NCC Directory of Computing Suppliers. Published by NCC Publications, £15,00

THIS is a companion volume to the NCC Directories of Hardware Services and Software and consists of an alphabetical list of computing suppliers throughout the country, including non-NCC members. Unfortunately, the layout and presentation are extremely poor,

proudly announces in the front the information was produced by the Filetab report generator.

Little appears to have been done to modify the initial computer listing, as suppliers details are all incapital letters with no punctuation, and the book has ro be turned at right angles to be read, like a miniature printout.

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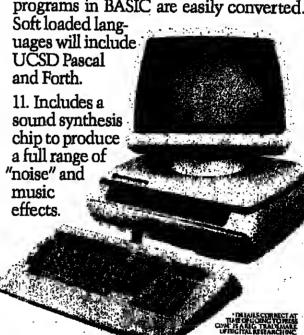
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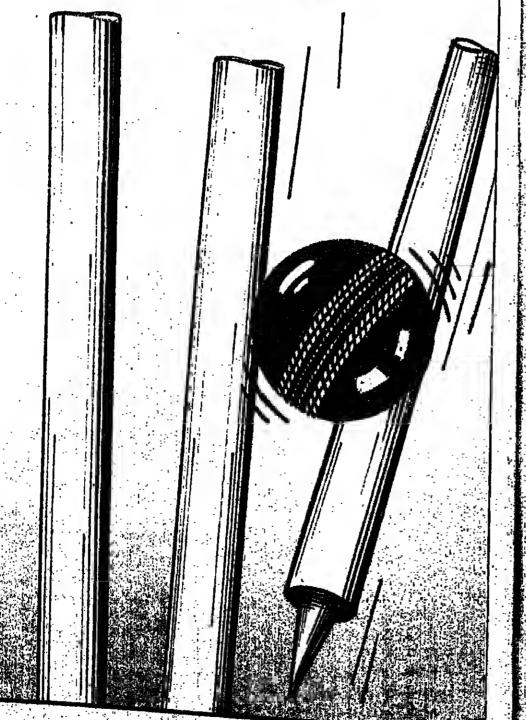
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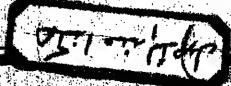
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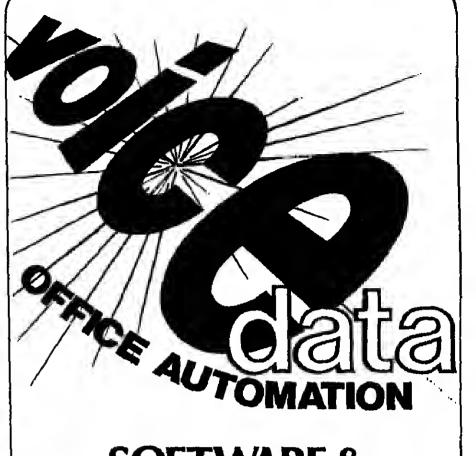
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Boards of England, Scotland, Wales and Northern Ireland, comes a major new information processing project to replace systems currently in use for keeping professional records of Individuals. Computerisation will also be utilised for the statutory bodies in the areas of financial information, statistical analysis and central processing of applications for training places. The production of single shared database system for this information requirement has created a necessity to recruit initially a further 3 Systems and Programming professionals. The technical and personality aspects of which are outlined below.

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The Senior Analyst position is critical in terms of defining and quantifying requirements identified by the Senior computing management. He or she will be able to demonstrate proven ability in project control and man-management. It would also be of considerable importance to have some fundamental programming knowledge or experience and to be able to communicate and present ideas and technical information effectively in user areas. The person will be expected to control, manage and motivate more junior systems staff particularly analyst programmers and within the database environment, the person will play an active role in data policy and deputise for the Database Administrator where appropriate.

The position offers an ideal opportunity for unique experience because the project is in its early stages, and will be one of the largest ever undertaken in

The position of Senior Programmer offers a considerable opportunity for an experienced IBM COBOL Programmer who has worked with on-line systems (and most probably in an MVS environment) to play a very Important role within the newly created department. You would be responsible for junior programming personnel and will be expected to manage, motivate and direct others, in addition to providing technical training where appropriate, it is essential that you have proven ability in systems design in addition to your programming skills, as you will be picking up specifications resulting from feasibility study and analysis functions. You may be working directly to the computer management or to the Senior Analyst depending on the individual projects.

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#### Systems Programmers

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RS124

#### Software Programmers

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working knowledge of French.

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To £13,500

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#### **Analysts**

To £12,500

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London

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Middlesex To £12,000 A minimum of 2 years experience of IBM System/38 using RPGIII is required for this position working for a large organisation in Middlesex. Excellent opportunity end good career prospects for the successful applicant.

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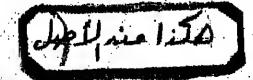
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A lerge financial organisation are looking for a DOS/VSE, CICS operator with a minimum of two years experience ideally gained on an extensive network to join their dynamic feem. A two-shift system is in operation, (no nights) and benefits are excellent Including a aubsidised MORTGAGE.

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## **Network Operator**

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The recont expansion of network services has created a vacancy for a bright, young operations professional to join an experienced network form. Candidates will have spent at teast two years working in a largo IBM installation and

should demonstrate a sound knowledge of DOS/VSE and CICS/VS. This opportunity is ideal for those anxious to work in a progressive large machine environment, but who currently feel they are unable to progress. ICCH provides excellent training facilities and is committed to promotion from within based on an individual's ability.

A Iwo shift system is in operation. Fringe benefits include Non-Contributory Pension Scheme, Staff Loans, Subsidised Lunch Facilities, Interest Free Loans for Season Tickets, Four Weeks Holiday, Sports and Social Club, and later you may quelify for a Mortgage Subsidy.

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Central processing lecilities are based on new DEC VAX hardware with a countrywide communications network linking 24 depots end 3 lactories. It is a highly ambilitious development programme that will culminate in the implementation of e tully integrated menutecturing system to include Buying. Production Planning, Recipe Control, Load Scheduling, Stock Allocation and Vehicle Routing. To ensure the success of the project, the company intend recruiting a talented Project Leader with the right blend of technical and commercial business skills.

Applicants will have a background in production control and have played a senior role in the development cycle of a major system. You will be able to communicate affectively and inspire and motivate a team of hard working professionals. Fundamentally it will give you the chance to bring your creative tlair into an

environment committed to the use of advance; computing techniques.

Head office is in Sunbury on-Thames, Middlesex, but the nature of the job will demand some travel within the UK. The starting salary is highly competitive and the usual large company benefits, including Assistance with Relocation and BUPA, will apply. To find our more about this outstanding opportunity and to arrange immediate interviews contacted DMJ/800 without delay.



# Programmer/Analyst COBOL to £10,000

The expression 'small is beautiful' is certainly appropriate when considering this opportunity. Provided you can use the latest in hardwere/software technology, working in e smell unit will give you ter greater experience, considerably broaden your professional skills and allow you the chance to make e positive

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To cope with this expansion of computing facilities, the company raquire en edditional Progremmer/Anelyst.

Experience of COBOL (hardware background irrelevant) is essential end tdeally you will have some knowledge of systems design. Personality is important end it is anticipated that you will be young, embitious and able to work with the minimum of supervision.

The company are housed in pleasant modern offices in BROMLEY on the London/Kent borders. It's close proximity to motorway

networks end public transport makes it a very convenient tacetion.

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# Senior Programmer/Analyst DEC/COBOL Gloucester (£ neg)

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Computing maintains a strong presence in etmost every sector of business activity end in order to develop a fully integrated Administrative System. The company has made a significant Investment in distributive processing based on DEC VAX 11/780's. The communications network extends countrywide and the system is now fundamental to the efficient control of whet is a high volume end fast moving business Additional meintreme facilities are currently processing a diverse range of major commercial applications. It is an impressive operation and one their will continue to keep pace with demand.

Supporting the dietributive systems is a vitel function and it is in this area thet the organisetton intend recruiting en experienced Senior Programmer/Analyst. Cendidates, with a good academic record, should have at least 2 years Cobol Programming experience with a DEC environment. You will have been involved

with the implementation of newsystems and be able to demonstrate some experience in the erea of system design. Majority, lefability and initiative are all essential qualities logether with the confidence to fit into a demanding and highly challenging environment.

The position is based in Gloucester and its expected that you will be currently living within a commutable distance of this very altrective location. Shill working is operable.

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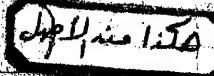
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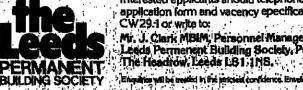
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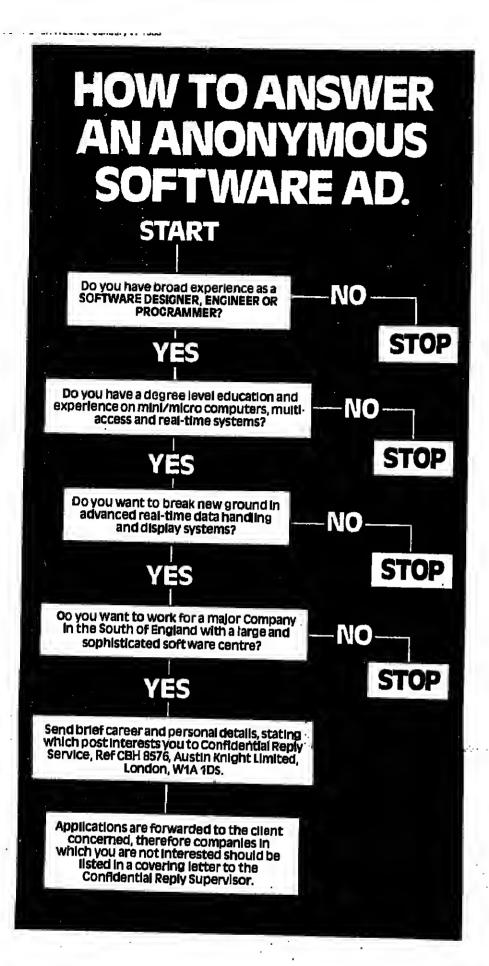
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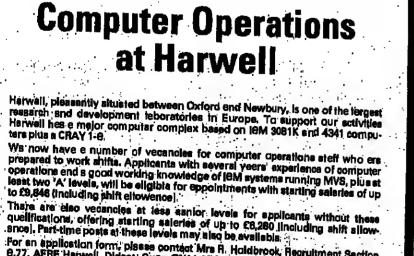


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Systems Analysts, Analyst Progremmers and Programmars ere required for a successful American organisation in the services industry, with its hasdquarters in

The Company uses a wide range of computer hardware for various applications although the current requirements are related to the IBM 4331 based systems. A minimum of three yeers' DP experience is essential and a COBOL programming background is required for all positions. The main requirement is for Ansiyat/Programmers although opportunities also axist for Analysts and Programmers, RPG and accounting systems experience would be useful but la not essential.

These are parmanant positions although contract appointments will also be considered. Reclistic U.S. selaries will be in the \$20-35,000 range plus frings banefits Including medical, travel, life assurance, etc.

Please contact isn Murray West

#### **WEST GERMANY**

#### Systems Programmers c£700 p.w. IBM 3033 MVS/IMS

Five Systems Programmers are required ideally on a contract basis for a major project in Central Germany to cover tuning, systems generation, enhancement, atc. Knowledge of PL1 or COBOL is eleo prefereble.

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Our client, the exclusive Saudi Arabie representative for Deta General, Tektronix Csicomp and Printronix require two further aslesmen to promote in particular tha DG renge of hardwere and associate softwere.

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Please telephone 01-893 2847 (Mon.-Frt.) of at weekende Roger Allington on Little Geddeeden (644284)

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The County Council with offices in Barneloy have Iwo 2966 4 MB ICL Computer Systems supporting considerable on-time, remote hatch and conventional hatch processing running under OME/G3 operating eyatom, work is currently in hand to introduce message routing software on the 7806 FEP to give

Applications ere invited from auliably experienced persons for the following poets:— **SENIOR SYSTEMS** 

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#### SENIOR SYSTEMS

**ANALYST** POST REF. T246 BYSTEMS ANALYST

Grade 601/2 Balery £8,658-£10,071 Grade AP4/5 Balery £6,873-£8,325

Applicants should have wide technical experience Applicants anotic nava wide recentles experience preferably using date base lechniques. The successful applicant for the senter post will be responsible for a small team of analysts and both successful applicants will be involved in the development of a wide range of systems for eli departments of the County Council on both mainfrems and mini/micro computers (whichev

The County Council operates a system of flexible working hours and payment of removal expenses, lodging and travelling allowaness will be made in

Please write for an application form, quoting the appropriate post reference, to the Chief Executive (Personnel), South Yorkshire County Council, County Hell, Sernaley 570 2TN or Telephone Barneley (0228)

Closing data for applications will be 11th February,

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**PROGRAMMERS** 



THIS month's £10 prizewinner is Sheiis Russell, a senior systems analyst with UCC in Birmingham. Prizes of £5 go to David Botibol, a systems designer with Sun Alliance in Horsham, and Peter Eccles, a software consultant with Leicester-based MSP.

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SENIOR PROGRAMMERS SO1 £8,658-£9,231 PROGRAMMERS AP4 £6,873-£4,545

The above additional staff are required to arrisense the range of services provided to all of the Caunali's departments. The Authority utilises C.M.C. Sequals and Reality equipment and the next phase of development will involve a further extension of the existing large forminal network. Extensive programming experience is required for the senior posts, together with the ability to make major contributions towards system design and work directly without supervision with user departments. Requirements for the programmers posts are at least two years sound users within a defined system outline. C.M.C. experience is desirable but not assential. Further information can be obtained from Mr Twohig, Tsi. Wakefield 370211, Ext 203.

Readdressed to The Chief Executive, [Persennel Section], Town Hall, Wekefield, to be returned by 7.2.1983.

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ning right up to New Year's

Eve (or even beyond!:

COMPLICATIVE EXCY January 27 1993 65

be letting tomorrow look after itself, with the experience sull goes unsatis-fied. wetchword: Survival! The second reason is perhaps not so obvious. One there appears to be an increasing swing towards contract personnel alof the major facts of econothough, as can be seen from confidence that occurs at all levels of industry. This is particularly true of the em-ployee who has enjoyed sucstill a strong demand for While the demand for ex-

pericoced analysts, programmers and consultants is Those who may be rly widespread, there is a particularly strong demand for experienced senior cootemplating the benefits of alternative employment inevitably fell into the "devil people, especially those with you know" syndrome. At least, within one's present systems knowledge to operate on a contract hasia within a variety of major company any current or subsequent failure will be seen to the light of past sucprojects throughout the

cess, thus generating s de-gree of latitude and under-This swing towards But failure with a new standable to the present conemployer where oo comic climate. It must be successful track-record exlists must inevitably tead to
early departure and prospects of social security.
With this io mind it is easy
to uoderstand the reluctance
of many people to put them
selves on the market. of many people to put them-selves on the market.

expertise for a given project. In fact, the trend towards cootractors is such that we are now being asked to provide freelance salesmen quite a departure for the computer industry. But

workforce which will benefit many employers in the short term; and for meoy em-ployees, staying put will be a sensible strategy. Having said that, for those emmore of that next week. By the way my book is due to be published in May by McGraw-Hill. It is called All About Selling — well, I just thought I'd mention it! ployees who canool keep no with the cost of living, the only alternative may be 10 only alternative may be to make for pastures new.

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Alan Williams

PUZZLE ANSWER

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mooth for my companies, Sales and Marketing Re-

